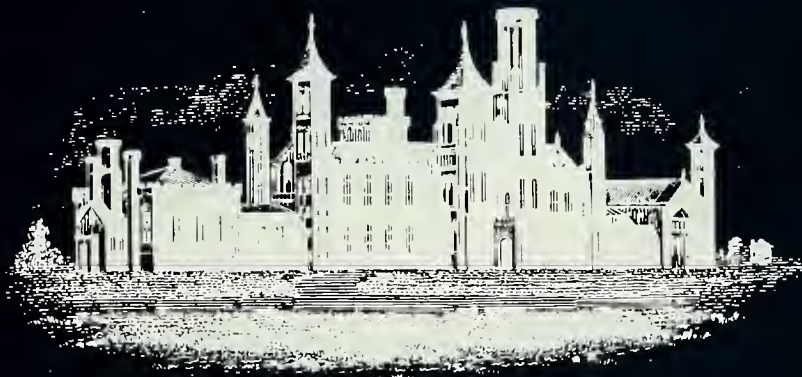


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SMITHSONIAN INSTITUTION

Fiscal Year 1993

Justification of Estimates of Appropriations to the Office of Management and Budget



ADMINISTRATIVELY CONFIDENTIAL

(Information not to be released until after the President's
Budget is submitted to the Congress in January 1992)

September 1991

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SMITHSONIAN INSTITUTION
FISCAL YEAR 1993

Justification of Estimates of Appropriations
to the Office of Management and Budget

SMITHSONIAN INSTITUTION

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FOR THE PERFORMING ARTS
-
- NATIONAL GALLERY OF ART
-
- WOODROW WILSON
INTERNATIONAL CENTER
FOR SCHOLARS
-

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**Office of
Inspector
General**

UNDER SECRETARY.

BOARDS AND COMMISSIONS

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Board of Trustees
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Visiting Committee
Cooper-Hewitt,
National Museum of Design
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Folklife Advisory Council
Freer Gallery of Art
Visiting Committee
Hirshhorn Museum and Sculpture Garden
Board of Trustees
National Air and Space Museum
Advisory Board
National Museum of African Art
Commission
National Museum of American Art
Commission
National Museum of the American
Indian, Board of Trustees
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Museum of Natural History
National Portrait Gallery
Commission
National Science Resources Center
Advisory Board
Smithsonian Associates
National Board
Smithsonian Council
Women's Committee of the
Smithsonian Associates

GENERAL COUNSEL•

Assistant Secretary
for

FINANCE AND ADMINISTRATION•

Office of the Treasurer•
Business Management Office
Concessions
Mail Order Division
Office of Product Licensing
Smithsonian Museum Shops
Office of Accounting and Financial Services
Office of Contracting and Property Management
Office of Equal Opportunity
Office of Facilities Services
Office of Architectural History and Historic Preservation
Office of Design and Construction

Assistant Secretary
for

INSTITUTIONAL INITIATIVES•

Office of Environmental Management and Safety
Office of Plant Services
Office of Protection Services
Office of Financial and Management Analysis
Office of Human Resources
Office of Information Resource Management
Office of Planning and Budget
Office of Printing and Photographic Services
Office of Risk Management
Office of Sponsored Projects
Travel Services Office

Assistant Secretary
for
RESEARCH•

International Environmental Science
Program
National Zoological Park••
Office of Environmental Awareness
Office of Fellowships and Grants
Office of Interdisciplinary Studies
Office of Quincentenary Programs
Smithsonian Astrophysical Observatory
Smithsonian Environmental Research Center
Smithsonian Institution Archives
Smithsonian Institution Libraries
Smithsonian Tropical Research Institute

Assistant Secretary
for
MUSEUMS•

Anacostia Museum••
Archives of American Art••
Arthur M. Sackler Gallery and
Freer Gallery of Art••
Conservation Analytical Laboratory
Cooper-Hewitt, National Museum of Design••
Hirshhorn Museum and Sculpture Garden••
International Gallery
National Air and Space Museum••
National Museum of African Art••
National Museum of American Art••
Renwick Gallery••
National Museum of American History••
National Museum of the American Indian••
National Museum of Natural History/
National Museum of Man••
Museum Support Center••
National Portrait Gallery••
Office of Exhibits Central
Office of Institutional Studies
Office of Museum Programs
Office of the Registrar
Smithsonian Institution Traveling
Exhibition Service

Assistant Secretary
for
PUBLIC SERVICE•

National Science Resources Center
Office of Conference Services
Office of Elementary and Secondary
Education
Office of Folklife Programs
Office of Public Affairs
Office of Wider Audience
Development
Visitor Information and Associates'
Reception Center

Assistant Secretary
for
EXTERNAL AFFAIRS•

Office of Development•
Office of Government Relations•
Office of International Relations
Office of Special Events
Office of Telecommunications
Smithsonian Institution Press
Smithsonian Magazine
Air and Space Magazine
Smithsonian National Associate
Program
Smithsonian Resident Associate
Program

SMITHSONIAN INSTITUTION

FISCAL YEAR 1993 ESTIMATES OF APPROPRIATIONS

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SMITHSONIAN INSTITUTION
FY 1993 BUDGET REQUEST
(\$000's)

<u>APPROPRIATION</u> <u>ACCOUNT</u>	<u>FY 1992</u> <u>BASE</u>	<u>FY 1993</u> <u>REQUEST</u>
Salaries and Expenses	\$292,450	\$377,441
Repair and Restoration	31,600	36,500
Construction	25,100	79,550
Zoo Construction	<u>8,000</u>	<u>15,948</u>
 TOTAL	 \$357,150	 \$509,439

INTRODUCTION

Visitors to the Smithsonian are consistently impressed by its numerous buildings, its well-maintained gardens, its exhibit halls, its theaters and lecture halls, and its public cafeterias, including the Wright Place in the National Air and Space Museum. The Institution's managers constantly maintain, renovate, improve, and replace these facilities to stem the ravages of time and heavy use. Moreover, the Institution recognizes its responsibility to reinvest not only in the infrastructure of bricks and mortar but also in the infrastructure of programs conducted within these buildings, halls, and theaters.

In FY 1993, the Smithsonian plans to continue a multi-year program of reinvestment in its foundations to obtain greater future yields in the increase and diffusion of knowledge among the American people and the peoples of the world.

FY 1993 BUDGET PRIORITIES

The Smithsonian Institution's request for all operating and capital budget accounts in FY 1993 totals \$509.4 million, \$152.4 million over the FY 1992 base. Of this amount, \$35.9 million represents resources that the Institution needs to reinforce its programmatic, operational, and facilities infrastructure--an investment in the foundation that will prepare the Institution to move into the 21st century; only \$11.4 million represents resources for new program initiatives and services.

SALARIES AND EXPENSES:

The Salaries and Expenses (S&E) request of \$377.4 million and 5,244 workyears represents a net increase of \$85.0 million over the FY 1992 Smithsonian level. As in the formulation of the FY 1992 budget, the Institution's various program and operating infrastructure requirements were the central theme in its deliberations for FY 1993 and represent \$32.9 million of the requested increase. In addition, the Institution has continued to support several principal themes for new program initiatives--Education, Global Change Research, and Cultural Pluralism, each responding to a clear national and public imperative. These initiatives represent \$9.5 million of the requested increase, including \$3.0 million for education, \$3.1 million for global change research, and \$3.4 million related to cultural pluralism. In support of these initiatives, the Institution's FY 1993 budget request contains \$1.4 million for development officers to enhance the Smithsonian's private fund-raising capabilities. An amount of \$41.2 million is required

to cover the increased costs of "uncontrollable" items such as utilities, space rental, and the costs of legislated pay raises.

Of the total FY 1993 S&E budget, the Institution requests that \$43,277,000 remain available until expended. These funds support the instrumentation program; collections acquisition; Museum Support Center equipment and move; exhibition reinstallation; the National Museum of the American Indian; the repatriation program; and land acquisition at the Smithsonian Environmental Research Center.

STEWARDSHIP OF THE PUBLIC TRUST:

Review of the resource requirements necessary to carry out the public trust and to achieve the Institution's goals makes it evident to Smithsonian management that the majority of these requirements do not represent new or expanded service levels. Instead, most of these requirements constitute a backlog of resource deficiencies for current programs. These deficiencies jeopardize the Institution's ability to manage the National Collections it holds in trust for the American people and its ability to increase knowledge and understanding among future generations. For the past two years, during the budget deliberations, the Institution grouped like deficiencies throughout various Smithsonian bureaus and offices into several broad categories in an effort to portray the magnitude of these deficiencies. This year the Institution continues its efforts to reduce this backlog. The table below provides a summary of the \$32.9 million and 305 workyears the Institution is requesting for various infrastructure requirements in FY 1993 and shows the remaining need the Institution intends to address in future budget years. Following the table is a category-by-category explanation of the importance of addressing these catch-up requirements.

RESOURCES REQUESTED FOR FY 1993 FOR INFRASTRUCTURE COMPARED TO THE UNFUNDED BACKLOG OF REQUIREMENTS

Infrastructure Bundle	FY 1993 Requested Increases		Unfunded Requirements Backlog	
	FTE	\$000	FTE	\$000
Conservation of Library and Archival Collections	9	678	4	24
Reinstallation of Permanent Exhibit Halls	4	1,496	1	1,564
Library Acquisition	0	400	0	80
Collections Management	54	7,930	14	1,077
Human Resource Management	8	469	3	433
Clerical Support Staff	14	462	23	744
Specialized & Technical Staff and Support Costs	48	3,240	112	8,212
Major Scientific Instrumentation	0	2,100	Not Applicable	
Laboratory and Scientific Equipment (Non-computing)	0	750	0	1,750
Computers (Hardware)	4	2,385	9	62
Information Systems	17	4,050	43	7,178
Management Controls (including CFO Act) and Audit Deficiencies	29	3,344	19	1,803
Space Deficiencies	1	495	0	390
Facilities Maintenance Deficiencies	39	2,207	67	3,250
Health and Safety (including Asbestos Cleanup)	23	1,100	9	763
Security of Facilities and Collections	55	1,799	58	1,563
Total	305	\$32,905	362	\$28,893

Conservation of Library and Archival Collections - The Smithsonian's archives and libraries--books, documents, films, photographs, and recordings--are national resources. Their words and images are fuel to generate energy in the powerhouse of knowledge and understanding. Some are renewable; many unique ones are not. All are fragile; all deteriorate with use. Conservation and sustained investment are essential to maintain them. If the Smithsonian does not replace and preserve these items, it only hastens their deterioration, destruction, and depletion. Deferred investment simply intensifies a growing national debt of future replacement and renewal costs. Conservation is not a one-time need; it represents an essential sustained capital investment. Each year that the investment is not up to optimum levels accelerates cumulative deterioration, increases total cost and total loss, and makes it ever more difficult to recover these collections.

Reinstallation of Permanent Exhibit Halls - The Smithsonian receives visitors from all over the world who come to be enlightened, educated, and inspired. The Smithsonian is the "National" museum and, as such, has a public responsibility to reflect current concerns and perceptions of the Nation and the world.

After years of good service, "permanent" exhibitions become obsolete, both in their interpretive or presentation strategies and in their interest to the public. Many of the Institution's exhibitions have long outlived the timeliness and accuracy of their content. Few Smithsonian museums have had the funding to incorporate new exhibition techniques, such as laser discs and computers, that increase understanding among a museum-going constituency increasingly experienced in these methods and expecting their use. These new technologies also enable museums to explain exhibits in less space by reducing the area devoted to lengthy descriptive labels. Additional funding will guarantee that the information and presentation of Smithsonian exhibits reflect contemporary interests and achievements.

Library Acquisition - Modern researchers are dependent on the availability of published results from colleagues. The most utilized and timely source of such information is scholarly journals. The more than 40,000 journals in the sciences reflect the incredible degree of specialization in the scientific fields alone. Thus, an active scholar in a scientific discipline (e.g., molecular biology) can no longer simply read one or two of the scores of specialized journals available. To scientists and scholars, immediate access to the full range of scholarly literature is as important as research equipment.

The Institution has in recent years attempted to maintain its current level of service by canceling some of the lesser-used journals, taking advantage of interlibrary loans, and utilizing private document delivery services. Although the Institution has vigorously pursued these options, journals dealing with such pivotal international issues as global change and molecular genetics are not a regular part of the Institution's journal base. Hence, the Institution needs additional resources to ensure that its scholars have regular access to information in those fields in which advances are occurring. The Smithsonian Institution Libraries manages the collection of periodicals for the entire Smithsonian community and for various related agencies represented within the Institution, including the United States Geological Survey, Fish and Wildlife Service, Department of Agriculture, and National Oceanic and Atmospheric Administration. Without access to scholarly journals, Smithsonian staff cannot conduct research in critical areas of national interest ranging from global warming to embryo transfer and space research.

Collections Management - The millions of artifacts and specimens entrusted to the Smithsonian as part of the National Collections truly constitute the "Nation's treasure

chest." The care of collections is a sacred responsibility to the American public now and for future generations. With proper care, the National Collections can continue to offer future scholars valuable opportunities for study that cannot be envisioned today.

However, collections care is technical, tedious, and never complete, for the standards of care continuously increase as the museum profession learns more about the composition of objects and the effects of environment. The Institution has spent considerable sums to improve the registration, storage, restoration, and conservation care of objects and is proud of demonstration projects such as the Collections Information System (CIS) and the Museum Support Center. Despite advances such as these, responsibility for the care of collections escalates as they grow and age. Research on new preservation techniques and related advancements and automation make collections care an increasingly complex and expensive endeavor.

Human Resource Management - In its May 1989 report, Improving Personnel Operations and Policies, the National Academy of Public Administration (NAPA) urged that, for the Smithsonian Institution's long-term organizational health, its personnel office be transformed from a "procedures and process" operation to an organization that provides leadership in managing the Institution's human resources. To that end, the Academy recommended that the Office of Human Resources (formerly the Office of Personnel Administration) be responsible for human resource planning and budgeting, personnel policy development and administration, management and supervisory training, and oversight of related information systems. The Academy went on to reaffirm that with these responsibilities come greater accountability.

To achieve prerequisite efficiency and effectiveness, the report made many recommendations pertaining to day-to-day operations. In addition, the Academy pointed out that the ratio of employees served to personnel staff was well above the ratio recommended by the President's Council on Management Improvement. This finding confirmed the general perception both within and outside the Office that it is understaffed. The Institution began to address the recommendations in the NAPA and other reports on the Institution's human resource management infrastructure in FY 1991. The Institution plans to continue these efforts in FY 1992 and FY 1993.

Clerical Support Staff - Over the past years, growth of public demands and programs at the Institution has resulted in a deficiency in clerical support. Productivity in many programs would increase measurably if additional clerical support were available to assist scientists, curators, and other museum specialists. The shortage of clerical support slows the Institution's progress in addressing critical programmatic imperatives such as global environmental change research and cultural diversity. Shortages in clerical support exist throughout the Institution. Bureaus evidencing shortages include the National Portrait Gallery, Smithsonian Environmental Research Center, National Science Resources Center, Anacostia Museum, and the Cooper-Hewitt Museum, as well as several administrative and support areas.

Specialized and Technical Staff and Support Costs - Among the Institution's major areas of concern over the past decade has been the closing of selective gaps in its research programs through the recruitment of new professional staff. A related objective has been to provide an adequate level of technical assistance to members of the professional staff so they can be more efficient and productive in the advancement of scholarship and public programming. For too long, many highly trained staff within the Institution have had to perform functions best suited to technicians, functions that divert

them from their primary responsibilities. In addition to dealing with these deficiencies in existing programs, the Institution must also address the need to staff newly constructed or recently renovated facilities. The teaming of scholars with a proficient technical support staff is essential for the Institution to meet the many challenges facing the Nation in the next few years.

Major Scientific Instrumentation - A portion of the Institution's request for additional funding for Major Scientific Instrumentation will enable the Smithsonian Astrophysical Observatory (SAO) to continue two important projects involving the development of new and the reconfiguration of existing instrumentation. The construction of the submillimeter telescope array will allow SAO scientists to study more effectively the formation of stars and planetary systems and the puzzling processes taking place in the cores of galaxies and quasars. The conversion of the Multiple Mirror Telescope (MMT) to a telescope with a single 6.5-meter diameter mirror will enable SAO to gather data on objects much fainter than is currently possible and to study more than twice as much of the universe. Also, the Smithsonian's instrumentation includes funding for a canopy access system for both the Smithsonian Tropical Research Institute and the Smithsonian Environmental Research Center. The Smithsonian intends to construct two custom-designed cranes, one for each location, to permit study of tropical and temperate forest canopies. The Smithsonian will seek funds in future years for the final payment for the cranes and for the construction of two additional cranes.

Laboratory and Scientific Equipment - The Smithsonian is not exempt from the difficulties faced by other research institutions in overhauling an obsolete research infrastructure. The availability of up-to-date research equipment is a basic necessity for scholars to remain competitive with their peers worldwide. In this regard, direct Federal funding is essential, since the Institution is not permitted to obtain National Science Foundation funding which is available to universities for this purpose. Failure to obtain necessary equipment will seriously impair the Institution's ability to meet crucial objectives in global environmental research. In the end, new facilities and talented scholars will be left without the opportunity to make full use of their skills.

In recent years, the Institution has placed major emphasis on improving its research facilities. It is not sufficient, however, to provide scholars with new or renovated space without also supplying them with the attendant tools of their trade--research equipment. All the Institution's research bureaus and research support offices have equipment acquisition and replacement plans detailing their requirements over the next decade. It is clear that, in an era in which research equipment has become increasingly sophisticated and is rapidly superseded by technological advances, much of the Institution's equipment inventory is obsolete. The Institution has systematically begun to rebuild the critical infrastructure requirements of laboratory and scientific equipment in selected areas. The National Zoological Park requires equipment to take advantage of the rapid advances in the biomedical field for the study and care of endangered species. The Conservation Analytical Laboratory requires resources to replace equipment purchased or obtained more than a decade ago, some under excess property guidelines.

Computers - The computer is an indispensable tool for the production and dissemination of research. Scholars increasingly use computers to communicate through networks that provide bibliographic information, store research data, and prepare, or even publish, manuscripts. Due to limited resources, the Smithsonian has been unable to realize fully the potential of computer technology for increasing efficiency and productivity in the scholarly realm. The Institution now seeks to purchase, install, and create effective computer networks for its scholars. This means replacing and upgrading computers,

software, and networks for bureaus already using computer technology and, at the same time, implementing a computer acquisition program for small bureaus that lack even rudimentary computing equipment.

Information Systems - In early 1989, the Office of Information Resource Management held an organization-wide planning symposium to assess the state of Information Resource Management (IRM) in the Institution and to initiate an ongoing process for IRM planning and development. Through formal presentations, discussion groups, and critiques, users and providers of information services gained a comprehensive overview of information handling and services. In the course of discussion, attendees identified an urgent need to focus IRM efforts on the solution of the most pressing systems development and service delivery requirements, including systems for the management of museum specimens and objects and bibliographic and archival materials. It also became clear that the resources available for information-related services are inadequate to provide the up-to-date technologies, systems, and communications necessary for the conduct of Institutional activities.

In the short term, the Institution must allocate resources to meet three objectives:

- to allow access to collections management, research, public service, and administrative information;
- to develop, design, implement, and maintain computer systems;
- to define how information technologies can be used to meet established goals.

The unique role of the Smithsonian in education and research is in jeopardy. Its accessibility as a resource to researchers worldwide and its public status are diminishing. Increasingly complex research, education, and business demands for information exceed the capabilities of the Institution's existing technologies. To reclaim its position as a leader in research, education, and collections and to remain accountable as a public trust, the Smithsonian must have the resources to utilize appropriate advanced information technologies.

Management Controls (including CFO Act) and Audit Deficiencies - The Smithsonian maintains a strong program of audit and review of its financial affairs and access to and control of the National Collections. Although not a department or agency of the executive branch, the Smithsonian recognizes and observes the intent of the Federal Managers' Financial Integrity Act (FMFIA) and the Chief Financial Officers Act (CFO). Towards that end, the Smithsonian's Office of Inspector General (OIG) performs financial and program audits on a regular cycle. To supplement the OIG's review of internal controls, an outside certified public accounting firm performs an annual financial audit and the General Accounting Office and other agencies perform special audits from time to time. In addition, the Smithsonian's Office of Financial and Management Analysis conducts internal management review studies on an as-needed basis.

These reviews and audits identify deficiencies in internal controls, policies, and procedures; in compliance with internal and external requirements; and in meeting the needs of the public. Additionally, they identify areas where efficiency improvements are possible. By implementing the recommendations from these audits and reviews, the Smithsonian improves internal controls; limits the potential for waste, fraud, and abuse; and becomes more effective in meeting public needs and more efficient in carrying out its

programs. Eliminating such deficiencies also represents an investment with expected and important returns.

Space Deficiencies - Historically, the Institution has housed administrative and other central support functions in museum buildings on the Mall. With the growth of collections, research, and public programs, however, space in museums has gradually become very limited. Increasingly, the Institution has relied on leased space (in buildings convenient to Mall activity) to house administrative functions. There are two primary centers of off-Mall support: L'Enfant Plaza for administrative functions and the Service Center on North Capitol Street for light industrial, warehouse, and technical support.

The Institution presently leases space at L'Enfant Plaza for accounting, personnel, publications, design and construction, and procurement and contracting functions. The Institution uses both Federal and Trust resources to pay for the rental space in direct proportion to the number of Civil Service and Trust employees in each office. The Institution anticipates additional need for leased space as buildings on the Mall must accommodate growth in public programs. For FY 1993, the Institution requests resources to procure administrative facilities to replace the current leased warehouse facility located at 1111 North Capitol Street as well as funds to address space needs of the Office of Human Resources, Smithsonian Astrophysical Observatory, and the National Museum of American History.

Facilities Maintenance Deficiencies - The Smithsonian owns, operates, repairs, and maintains more than five million square feet of space in more than 200 buildings. These buildings range in age from new to more than 140 years old, and many appear on the registers of historic landmarks. Many are, in fact, among the most precious "artifacts" the Smithsonian holds in trust for the Nation. The Smithsonian must operate and maintain these buildings to ensure the continued functioning of their many diverse programmatic activities and to preserve them for use by future generations.

The Institution has identified a backlog of essential maintenance and repair projects most recently estimated at \$216 million. By increasing staff and equipment for facilities maintenance, the Institution will slow the rate of deterioration of its buildings and thus slow the rate at which new repairs add to the backlog. Additional staff for facilities maintenance will also ensure timely completion of Repair and Restoration of Buildings projects.

Health and Safety (including Asbestos Cleanup) - The Institution is concerned about the health and safety of its staff and visitors. In recent years, Congress has allocated resources for a solid foundation in environmental management and safety programming. Staff members are now available to assess most environmental and safety hazards of the physical plant and to identify necessary changes to buildings or work practices. The Institution needs resources, however, to coordinate Institution-wide asbestos abatement work and to carry out the changes identified by existing programs, particularly at the bureau level. Staff of the Office of Environmental Management and Safety are developing programs necessary to inform and protect employees who work with dangerous chemicals or are exposed to hazardous conditions, and to identify fire or safety risks in the workplace and public areas of Smithsonian buildings. Additional resources will allow coordination of efforts at the bureau level and ensure that laboratories and offices throughout the Institution can implement these safety programs.

An occupational health program is now in place, but the Institution needs additional resources to meet statutory obligations to staff. Presently the Smithsonian is unable to meet several mandatory requirements for health monitoring of all employees exposed to hazardous materials or working under extreme physical conditions. The Smithsonian has established programs in wellness and substance abuse, but these programs require increased support. Added funds will increase the number of physical examinations performed and make counseling services available to more employees whose personal problems are interfering with their well-being and job performance. Without these resources, the Institution will fail to fully meet Federal standards for occupational health care for its employees.

Security of Facilities and Collections - The Smithsonian has more than 137 million items in its collections, on display in exhibitions, or in storage. In addition to the very high intrinsic value of objects such as gems and coins, most of the objects are irreplaceable examples of human experience and achievement as well as reminders of global development and change. The collections are stored within the museum buildings on the Mall, at specially designed storage facilities in Suitland, Maryland, and in some leased warehouses in Washington, D.C., Virginia, and elsewhere around the United States. The Institution also has research facilities in a number of remote locations in Panama and Arizona. Security in Smithsonian facilities consists of a complex combination of alarm systems throughout the buildings and physical surveillance by guards at entrances and in public galleries.

In the past several years, serious erosion of base resources to support the security program has undermined the Institution's ability to provide adequate protection for its collections and facilities. In recent years staffing shortages have caused the periodic closing of exhibit galleries when guards were not available for full coverage. While this solution interferes with the public's enjoyment of the exhibitions and activities presented at the various museums, the other alternative--a reduction in security coverage--places the collections and public property at an unacceptable level of risk from loss or irreparable damage.

INITIATIVES IN RESPONSE TO NATIONAL IMPERATIVES:

Global Change Research - During the past several years, countless studies and testimony have been presented before Congress and scientific groups concerning the effects of natural and human activities on the global environment. Rapidly evolving changes in the global environment have captured the attention of scientists, policy makers, and citizens around the world, including:

- the increase of atmospheric greenhouse gases such as carbon dioxide, methane, and the chlorofluorocarbons;
- the expected consequent changes in global climate and sea level;
- a global depletion of stratospheric ozone, and the observed Antarctic "ozone hole";
- widespread desertification and reduction in the diversity of plant and animal species;
- extensive damage to mid-latitude forests;
- acidification of lakes and soils in many regions.

At the least, these changes have far-reaching and potentially disruptive implications for the world's natural resources. In the worst case, the changes collectively threaten the life-support system of the Earth. The problem of global environmental change is crucial and urgent.

The Smithsonian Institution is ideally positioned to undertake important research initiatives in the field of global change by building upon its current programs. With more than 150 scientists in a variety of biological and physical science disciplines (coupled with its stewardship over large, protected areas in both the tropical and temperate zone), the Institution can undertake comparative studies to assist in understanding the complexities of this global problem. Because of its expertise, the Smithsonian participates as an observer in the intergovernmental Committee on Earth Sciences, which is coordinating Federal research efforts in this area.

The information that the Institution will generate as the result of proposed initiatives in global change research will be broadly available to policy makers and members of the scientific community. These scientific findings are also certain to form the basis for exhibitions in the National Museum of Natural History, the National Air and Space Museum, and other venues for public programming. The Institution's proven ability in sustaining long-term research at permanent sites is a crucial function that distinguishes the Smithsonian from Federal organizations and most universities involved in such research.

Cultural Pluralism - The demographics of the United States are changing, and the pluralism of our country is more evident. By the end of this decade, forecasts predict that the current dominant cultural group will no longer be the majority in the American work force and schools. This change and the exciting self-pride that minority groups are exerting calls for new responses from the Smithsonian such as altering its public programs, hiring practices, training opportunities, exhibition presentations, and collections acquisition. As a national institution, the Smithsonian is assuming a viewpoint that is deliberately inclusive in all respects.

The Institution is creating exhibitions and programs that examine the relationship between the indigenous peoples and the New World conquerors. The observance of the Columbus Quincentenary provides an opportunity to celebrate the accomplishments of minority people and inform others about the richness of their history. In response to enthusiastic public interest in African-American collections, the Institution is compiling information about African-American art and related cultural materials in support of the proposed African-American museum on the Mall. The Smithsonian is training minority people who wish to enter the Smithsonian's professional work force, thereby increasing the number of trained minority people in the museum profession at large. The Institution is considering the requests of the Native-American communities for their human remains and continuing to plan the new National Museum of the American Indian, making it a reality, particularly by developing Native-American staff to assume positions of professional leadership within the new museum. In addition to these efforts, it is imperative that Smithsonian programs and exhibitions welcome all peoples.

Education - During the FY 1993 budget formulation process, the Institution placed emphasis on education as a critical national imperative that the Smithsonian must respond to during the 1990s. Global change and other contemporary concerns present numerous opportunities for the Smithsonian to implement its mission to increase and diffuse knowledge. Doing so places many new public demands and challenges on the Smithsonian.

The Institution is committed to enhancing its exhibitions, education, and other programs to provide the public with meaningful and comprehensive interpretations of these issues. Besides improving its educational programs, the Institution is broadening the outreach of those programs through exhibitions and other educational activities that will increase participation by including culturally diverse communities, minorities, handicapped persons, and senior citizens. These efforts reflect new program initiatives that respond to these national imperatives and embody the recommendation of an internal staff committee to place greater emphasis on education.

Nearly 30 million visitors of all ages, cultures, and countries, crowd the Mall and other buildings for the opportunity to see and gain knowledge from the Institution's varied exhibitions, lecture series, and film festivals. The Institution will enhance its educational programs to provide activities for underrepresented groups such as the African-American, Native-American, Hispanic, and Asian communities. The Smithsonian will develop educational materials to introduce the public and students to Asian art and culture using objects from the Sackler collections that explore crosscutting aspects of Asian art and culture. The Institution will complete the fabrication and installation of the opening exhibit of the National Museum of the American Indian at the Old Custom House in New York City, which will serve local and national audiences much larger than ever before in the collection's history.

In order to address the concerns of national science literacy, the Institution must further develop programs to improve the teaching of science and mathematics in the Nation's school systems. The Smithsonian has participated this year in the work of the Federal Coordinating Committee for Science, Engineering, and Technology (FCCSET). The Institution is also working with the local educational systems to develop curriculum materials and programs for teachers and students, and to build stronger relationships with the community and encourage an early interest in the sciences.

Scientific research on the Institution's collections and the publication of scientific findings are fundamental to its educational mission. Scholars and other researchers benefit from Smithsonian scholarly publications. To serve the broadest possible audience, the Institution must continue to disseminate its findings through journals, national and international meetings and seminars, and public education activities.

Increases are requested in the FY 1993 budget and will be sought in future budgets to strengthen the education departments and programs of Smithsonian bureaus and offices in order to serve broad and diverse public audiences and to provide life-long and informal learning experiences in and beyond the classroom environment. As a unique educational institution, the Smithsonian must endeavor to adopt model educational strategies and techniques for informal, formal, and alternative education activities.

Development Support - The Institution's requirement for private funds has increased in recent years. Exhibitions for which there are no Federal appropriations, expanded educational programs, additional activity in cultural and biological diversity, and increased research and collections needs, all dictate a need for a more concerted effort for Institutional development. Over the years, the Institution has employed full-time development personnel exclusively on Trust funds, but the time has come to consider some Federal support for fundraising professionals. Federal funds applied to development will provide the Smithsonian with stability in planning and prioritizing for future fundraising activities. It will also demonstrate to potential funders that their contributions can be entirely allocated according to their philanthropic wishes, as opposed to partial

amounts being spent on operations. In the Institution's continuing challenge to find cost-effective ways to secure the public trust, Federal funds allocated to development activity will make it possible for the Smithsonian to better serve researchers, educators, and millions of visitors.

FACILITIES:

Construction - The Smithsonian's request for the Construction program for FY 1993 totals \$79.55 million. Projects proposed by the Smithsonian for the FY 1993 budget include planning an African-American Museum (\$.45 million), designing the Air and Space Museum Extension (\$8 million), planning and design for the facilities of the new National Museum of the American Indian (\$7.35 million), approved by Congress in 1989; completing the design and the required renovation of the General Post Office Building, located at 7th and E Streets, N.W., Washington, D.C. (\$38.3 million); constructing a new maintenance facility near STRI's newly completed Tupper Laboratory and Conference Center (\$1.95 million); planning a collections research center at Suitland, Maryland (\$.5 million); completing construction of the building inside the Natural History Building's East Courtyard, which will interconnect directly with the existing building and become an integral part of the Natural History Building (\$13.5 million); and several projects involving minor construction and/or modifications to existing buildings (\$8 million). The Institution also requests \$1.5 million for FY 1993 to continue planning for future construction projects.

Construction and Improvements, National Zoological Park - The request for the construction program at the National Zoological Park for FY 1993 is \$15.948 million. The request includes \$3.3 million to fund the highest priority repair and renovation projects at the Rock Creek Park site and Front Royal, Virginia. The Institution also requests \$9.28 million for the construction at Rock Creek, including \$.25 million for Olmsted Walk landscaping and \$6.93 million to construct an introductory module, "Living in Water," and a cluster of new habitat exhibits as part of the Zoo's Aquatic Trail. The fiscal 1993 budget also includes \$1.785 million for the design and initial site preparation for the Grasslands and Forest Exhibit and \$.315 million for graphics for all the pedestrian walkways in the park. The Institution's request also includes \$3.368 million for road improvements, maintenance, utilities upgrade, and construction at the Conservation and Research Center at Front Royal, Virginia.

Repair and Restoration of Buildings - The Institution is requesting \$36.5 million for the Repair and Restoration account. The Smithsonian's commitment to the maintenance and renovation of its facilities continues as a high priority in the FY 1993 budget. This request brings the Institution to the projected optimal annual level for the R&R account. The Institution must continue to eliminate the substantial backlog of deferred maintenance and repairs in its various facilities and protect the integrity of its physical infrastructure. Within the requested amount is \$5.55 million for the Major Capital Renewal program and \$30.95 million for Repair, Restoration, and Code Compliance projects.

NONAPPROPRIATED SOURCES OF FUNDING

In addition to support provided by Federal appropriations, the Institution receives nonappropriated funds to expand and enrich its programs. The Institution presents nonappropriated fund activities (Trust funds) along with the Federal budget request to provide an overview of all uses of funds for each Smithsonian bureau. The estimates for Trust funds are subject to the uncertainty of donations, grants, and contracts; fluctuations in visitor attendance; and the volatility of the economy, which directly affects restaurant, mail order, and shop revenues; Associates' memberships; and other auxiliary activities. The Institution's gross operating revenue, less the expenses of the auxiliary activities, represents the net operating revenue available for programmatic and other worthwhile purposes.

The proposed FY 1992 Trust budget constitutes approximately 25 percent of all net operating revenues. These revenues include grants and contracts received from Government agencies. For FY 1992, the Institution projects gross Trust fund revenues, excluding Government grants and contracts, will be \$62 million. The Smithsonian expects Government grants and contracts will total roughly \$35 million in FY 1992.

Due to the current economic climate, the Institution anticipates gross Trust fund revenues for FY 1991, excluding government grants and contracts, will be approximately \$232 million, compared to the \$253 million included in the original FY 1991 budget, and net income will be in the \$58 million to \$59 million range (which includes \$23 million for restricted purposes). The drop in revenues is directly attributable to the operating results of the auxiliary activities.

The Trust funds include unrestricted funds, restricted funds, and Government grants and contracts. The Institution applies them in the following manner:

UNRESTRICTED FUNDS:

General - The sources of general unrestricted funds are investment income; unrestricted endowment income; net proceeds from the museum shops, mail order, and food service concessions; sales of Smithsonian books, records, and other products based on designs and objects in the collections; the Resident Associate and National Associate programs (including the Smithsonian and Air and Space magazines); and overhead recovery on Government grants and contracts the Smithsonian receives. Overhead recovery is the principal source of Trust support for central management and administrative service units of the Institution, such as legal counsel, accounting, personnel, procurement, and budget. General funds also support various activities, such as the Cooper-Hewitt Museum, Office of Folklife Programs, Office of Development, Office of Telecommunications, Smithsonian Tropical Research Institute, Visitor Information and Associates' Reception Center, and a variety of Institutional and bureau-based programs. The Board of Regents approves these allotments.

Special Purpose - These funds arise from revenue-producing activities operated by various bureaus and offices and transfers of General funds. The two largest of these activities are the Theater/Spacearium operation of the National Air and Space Museum and the Cooper-Hewitt museum shop. Special Purpose funds also include miscellaneous revenues from the sale of posters, exhibit brochures, and publications, tuition reimbursement from universities, the museums' share of sales in the restaurant and museum shops, membership and admission fees, and exhibit rental income.

In FY 1979, the Board of Regents approved the annual transfer of General funds to Special Purpose funds for certain programs previously financed through Federal appropriations. These include the Institution's various fellowship programs (FY 1992 allotments of \$2.5 million). The Institution also uses Special Purpose funds to make awards under its Collections Acquisition, Scholarly Studies, and Educational Outreach programs. The proposed FY 1992 budget includes a total of \$2.76 million for these awards.

In FY 1992, \$977,000 is available to purchase exceptional objects important to the collections. The Institution also has designated \$1.36 million for innovative scholarly research projects that by definition or because of scheduling requirements do not fit within the Federal budget process. These include multi-disciplinary research projects initiated by the Institution's research staff, sometimes in collaboration with scholars from other institutions. Often the work is of an interdisciplinary nature and is conducted at more than one bureau. The Institution has allocated the remaining \$423,000 of the \$2.83 million available for this program to conduct a wide range of educational outreach programs of benefit to the public, with special focus on diverse cultural audiences.

In FY 1985, the Board of Regents approved an annual Trust-fund allocation for the Special Exhibition Fund (SEF). The Institution supports exhibition programs with Federal funds and donations from individuals, foundations, and corporations as well as with the Special Exhibition Fund. Trust monies funded 44 percent of all exhibition costs for 1989, with Federal funds providing 56 percent. The Special Exhibition Fund, with \$1.84 million proposed for FY 1992, will provide additional funds for temporary or permanent exhibitions proposed by Smithsonian bureaus that, regardless of scale, are outstanding in terms of their educational value to the public. The Fund gives special consideration to exhibitions that approach content in imaginative ways; that allow bureaus to explore new or expand current interpretive or exhibition techniques; that are worthy but, by their nature, unlikely to attract private funds; and that are likely to reach previously underserved audiences.

RESTRICTED FUNDS - Restricted Trust funds include gifts, grants, and endowments from individuals, foundations, organizations, and corporations that specify the use of the donation or bequest. Generally, these funds provide support for a particular exhibit or research project. The Freer endowment is the largest restricted endowment in the Institution. Under the terms of the original gift and bequest, this fund is strictly limited to uses benefiting the Freer Gallery of Art.

GOVERNMENT GRANTS AND CONTRACTS - Various Government agencies and departments provide grants and contracts for special projects that only the Smithsonian can conduct because of its expertise in a particular area of science, history, art, or education and because of its ability to respond quickly to certain needs.

OMB

FY 1993 UNCONTROLLABLE INCREASES

The Smithsonian Institution seeks funds to pay costs that are beyond its control to manage. These costs result from established practices in regulating wages, insurance premiums, utilities, rent, and the effects of inflation. In FY 1993, the Institution also seeks funds to restore the Institution's purchasing power to the FY 1987 level. The Institution requests \$41,166,000 for the following uncontrollable costs:

Salary and Related Costs

Necessary Pay:

--Annualization of FY 1992 Legislated Pay Raise	\$ 1,900,000
--FY 1993 Legislated Pay Raise	7,250,000
--Senior Executive Gradeless Pay System	800,000
--Within-Grade Step Increases	900,000
--Return One Additional Workday	(675,000)

Other:

--Health Insurance	1,050,000
--Federal Employees' Retirement System (FERS)	3,350,000
--Workers' Compensation	387,000
--Financial Systems Maintenance Charges	<u>250,000</u>

Total, Salary and Related Costs \$15,212,000

Utilities, Communications, and Postage \$ 700,000

Rental Space \$ 500,000

Administrative Service Center \$ 4,000,000

Inflation - FY 1993 \$ 2,250,000

Inflation - Prior Years \$12,500,000

Restoration of Prior Year Reductions \$ 6,004,000

Grand Total, Uncontrollable Increases \$41,166,000

SALARY AND RELATED COSTS - The Institution requests a net amount of \$15,212,000 for the projected higher salary and benefits costs in FY 1993 for FY 1992 staff. The Smithsonian has calculated costs required to provide annualized funding for the FY 1992 general pay raise (\$1,900,000), annualized funding for the FY 1993 general pay raise (\$7,250,000), the senior executive gradeless pay raise (\$800,000), anticipated within-grade increases (\$900,000), and the return of funds requested in FY 1992 to cover salary and benefit costs attributable to one additional paid day (\$675,000). In FY 1993, the Institution also requires funds to cover rising health insurance premiums (\$1,050,000), increased costs related to the Federal Employees' Retirement System (\$3,350,000), increased workers' compensation costs (\$387,000), and increased costs for financial systems maintenance (\$250,000).

Annualization of FY 1992 Legislated Pay Raise - The Smithsonian has included an amount of \$1,900,000 in its FY 1993 request to annualize the costs of the anticipated 4.2 percent January 1992 pay raise. The FY 1992 budget request now pending before the Congress contains full funding for three-quarters of a year applicable to the FY 1992 pay raise. The request provides full funding to cover costs for the remaining quarter of a year.

FY 1993 Legislated Pay Raise - The Smithsonian requests an amount of \$7,250,000 to fully fund the anticipated FY 1993 legislated pay raise of 4.7 percent for three-quarters of a year. The Institution will seek funds to annualize this pay raise in its FY 1994 budget request.

Senior Level Gradeless Pay System - On November 5, 1990, the Federal Employees Pay Comparability Act of 1990 (FEPCA) became law. Implementing regulations established the new FEPCA gradeless senior-level system for grades 16, 17, and 18. For FY 1993, the Institution requests \$800,000 to fully fund the cost of implementing this new senior-level system. The Smithsonian will absorb the partial-year costs in FY 1991, and is considering options to reprogram resources to cover the FY 1992 cost of the conversion. The FY 1992 request pending before the Congress does not include the costs associated with implementing this new system.

Within-Grade Step Increases - The Smithsonian seeks \$900,000 in FY 1993 for within-grade step increases. For General Schedule employees, these increases are required by Section 5335 of Title 5, United States Code. Wage employees are covered by law and prevailing rates. Increases include the partial-year costs of new actions scheduled to occur in the budget year, as well as the costs of annualizing FY 1992 step increases.

Return One Additional Workday - The Institution will return \$675,000 requested in FY 1992 to cover the salary and benefit costs for an additional workday. This will reduce Institutional base funding for employee compensation to a 261-day workyear. (FY 1992 contains base funding for 262 workdays.)

Health Insurance - For FY 1993, the Institution requests an amount of \$1,050,000 to cover the rising cost of health insurance premiums for employees. The Smithsonian's FY 1991 base (unchanged from FY 1990) is \$5,452,000, with a \$3,100,000 increase request pending before Congress for FY 1992. The requested increase includes the funds required to annualize the projected FY 1992 cost increase (\$380,000 for one-quarter of the year) and cover an estimated FY 1993 increase of ten percent (\$670,000 for three-quarters of the year).

Federal Employees' Retirement System (FERS) - Earlier this year the Institution calculated the increased cost of FERS over the existing civil service retirement system for all on-board FERS employees. This increase totalled \$7.1 million. To date, the Institution has received \$3.7 million for FERS in its Federal appropriation, leaving a shortfall of \$3,350,000. As the composition of the Institution's Federal workforce continues to change over time to include higher percentages of FERS employees, additional funds will be required.

Workers' Compensation - The Smithsonian requests an increase of \$387,000 as specified in the provisions of Section 8147(b) of Title 5, United States Code, as amended on April 21, 1976, by Public Law 94-273. This law provides for payments to be made to employees for injuries and to their families in cases where work accidents result in employee death. These payments are determined and made by the U.S. Department of Labor's Employment Standards Administration, which subsequently bills agencies for costs incurred for their employees. Despite the Institution's emphasis on the Accident Safety Program administered by the Office of Environmental Management and Safety (OEMS), providing employee training in safety awareness and promoting the identification and elimination of potential hazards in the workplace, there has been an increase in related employee compensation costs. The FY 1993 bill for the Institution's Federal portion, \$1,454,000, covers the actual expenses

incurred for the period July 1, 1990, through June 30, 1991. With an amount of \$1,067,000 in its base for workers' compensation, the Institution requests an additional \$387,000.

Financial Systems Maintenance Charges - The Institution utilizes the computer services of the U.S. Department of Agriculture's National Finance Center (NFC) to support personnel management and payroll production. With FY 1992 base Federal funds of \$710,000, the Smithsonian requires an increase of \$150,000 for the Federal share of processing the payroll and personnel data and related communication services for current staff and anticipated new positions in FY 1993. The Institution also requires funding of \$100,000 for maintenance costs associated with the software that supports the new Personnel Cost Projection System.

UTILITIES, COMMUNICATIONS, AND POSTAGE - An FY 1992 Federal base of \$20,553,000 and anticipated reimbursements of \$900,000 (total of \$21,453,000) are available to fund the costs of electricity, steam, gas, fuel oil, water, sewer, communications, and postage for nearly all Institution facilities. The Smithsonian requires an increase of \$700,000 in FY 1993 to cover anticipated costs.

The Smithsonian's projections of future utilities costs consider a variety of factors. These include:

- comparative data on actual energy consumption in previous years for each facility;
- adjustments for normal weather conditions for this geographic region based on information provided by the National Weather Service;
- actual and projected rates charged by utility companies;
- actual and projected reimbursements for utility costs from concessions, museum shops, and the Friends of the National Zoo;
- modifications to work and public spaces within facilities;
- continued energy conservation efforts in all Smithsonian buildings;
- improvements installed to heating, ventilating, and air conditioning systems and components throughout the physical plant;
- the design of new facilities;
- projected increases in consumption caused by expanded use of computers and other equipment throughout the Institution.

The following table shows the costs and base funds available to cover the components of the Utilities account from FY 1991 to FY 1993.

ANALYSIS OF UTILITIES, COMMUNICATIONS, AND POSTAGE COSTS

FY 1991 - FY 1993

(\$000's)

	<u>FY 1991</u> <u>ESTIMATE</u>	<u>FY 1992</u> <u>ESTIMATE</u>	<u>FY 1993</u> <u>ESTIMATE</u>
<u>ELECTRICITY</u>			
<u>Use</u> - Millions of KWH	115.1	114.5	114.5
<u>Unit Cost</u> - Avg. per KWH	0.068	0.065	0.066
<u>Cost</u> - \$000's	\$7,775	\$7,400	\$7,500
FY 1993 Estimated Cost			\$7,500
FY 1992 Base			<u>\$7,340*</u>
Base Shortage, Electricity			\$ 160
<u>STEAM</u>			
<u>Use</u> - Millions of Pounds	193.5	225.8	225.8
<u>Unit Cost</u> - Avg. per 1,000 lbs.	15.50	15.50	15.50
<u>Cost</u> - \$000's	\$3,000	\$3,500	\$3,500
FY 1993 Estimated Cost			\$3,500
FY 1992 Base			<u>\$3,500</u>
Base Shortage, Steam			\$ 0
<u>GAS</u>			
<u>Use</u> - Millions of Cubic Ft.	1.072	1.206	1.206
<u>Unit Cost</u> - Avg. per Cubic Ft.	0.7463	0.7463	0.8292
<u>Cost</u> - \$000's	\$ 800	\$ 900	\$1,000
FY 1993 Estimated Cost			\$1,000
FY 1992 Base			<u>\$1,000</u>
Base Shortage, Gas			\$ 0
<u>FUEL OIL/WATER</u>			
<u>Cost</u> - \$000's	\$ 300	\$ 350	\$ 400
FY 1993 Estimated Cost			\$ 400
FY 1992 Base			<u>\$ 300</u>
Base Shortage, Fuel Oil/Water			\$ 100
<u>D.C. GOV'T WATER/SEWER</u>			
<u>Cost</u> - \$000's	\$2,252	\$2,278	\$2,353
FY 1993 Estimated Cost			\$2,353
FY 1992 Base			<u>\$2,278</u>
Base Shortage, D.C. Water/Sewer			\$ 75

COMMUNICATIONS

<u>Cost</u> - \$000's	\$4,300	\$4,500	\$4,800
FY 1993 Estimated Cost			\$4,800
FY 1992 Base			<u>\$4,600</u>
Base Shortage, Communications			\$ 200

POSTAGE

<u>Cost</u> - \$000's	\$2,400	\$2,500	\$2,600
FY 1993 Estimated Cost			\$2,600
FY 1992 Base			<u>\$2,435</u>
Base Shortage, Postage			\$ 165

<u>TOTALS</u>	FY 1993 Estimated Cost	\$22,153
	FY 1992 Base	<u>\$21,453*</u>
	FY 1993 Requested Increase	\$ 700

*Reflects FY 1992 Federal base plus anticipated reimbursements in FY 1993 of \$900,000.

ELECTRICITY - The major component of the Utilities account is electricity. Consumption estimates for FY 1991 reflect that 1991 has been an unusually warm year requiring continuous operation of electrical systems to maintain the temperature and humidity conditions necessary to safeguard and preserve the staff and collections of the Institution. The FY 1993 estimate of electrical consumption reflects an increase associated with the operation of the National Museum of the American Indian in New York City, general increases associated with automation efforts underway in all Smithsonian facilities, and the upgrading of exhibit halls in the museums of Natural History and American History. However, the total FY 1993 request illustrates a return to normal weather patterns. The FY 1993 rate estimate includes a rate increase that has been filed for by PEPCO and is expected to be approved in time for implementation in FY 1993. These increases plus anticipated reimbursements in FY 1993 are insufficient to cover the anticipated electricity costs for FY 1993. An increase of \$160,000 is requested.

STEAM - The FY 1993 consumption estimate reflects a return to the normal weather patterns for the metropolitan Washington, D.C. area. Based upon a unit cost that has been stable for a number of years, the Institution expects that FY 1993 costs will not exceed the current available base.

GAS - The FY 1993 estimate reflects a two-part base rate increase that has been proposed by the Washington Gas Light Company and is expected to be in place by FY 1993. While consumption is expected to remain stable, the requested base is expected to cover the rate increase, so no increase is requested for FY 1993.

FUEL OIL/WATER - The FY 1993 estimate reflects consumption increases associated with the National Zoological Park facilities at Front Royal, Virginia and the National Museum of the American Indian in New York City. As a result of consumption increases, an additional \$100,000 is necessary to cover the costs for fuel oil and water in FY 1993.

D.C. GOVERNMENT WATER/SEWER - The FY 1992 and FY 1993 estimates are cost projections provided by the D.C. government. These estimates are based upon prior year usage. An additional \$75,000 is required in FY 1993.

COMMUNICATIONS - The FY 1993 estimate is based upon increased usage of data communication links between Washington, D.C. and remote Smithsonian facilities. This increase is also necessary to provide data communication services for access to Institutional information systems such as the Accounting and Payroll/Personnel systems, electronic mail system, and the Library system. These needs result in the requested increase of \$200,000.

POSTAGE - The FY 1993 estimate is based on a proposed rate increase by the United States Postal Service in 1992 and the increased volume of mail generated at the Smithsonian in response to requests for services and information. The increased volume and costs associated with the Smithsonian's use of the United States Postal Service will require an additional \$165,000 to fully fund these costs and services.

ENERGY CONSERVATION - The Institution continues to monitor and limit all forms of energy consumption. An automated energy management system reduces peak energy demand by selectively shutting down equipment when necessary. This system, when fully installed, will monitor equipment in all buildings for fluctuations or malfunctions and alert staff to inspect for problems. Ongoing efforts also include:

- continuing the phased program of comprehensive building energy audits;
- renovating heating, ventilating, air conditioning, plumbing, and electrical systems;
- reducing lighting levels in work and nonpublic areas;
- installing more efficient lighting fixtures;
- operating heating and air conditioning systems at the minimum level necessary to prevent damage to the collections;
- curtailing electrical consumption during nonpublic hours;
- increasing attention to energy conservation when determining space use, modifying space, and designing new facilities.

Through the use of the Facilities Management computer system, the Smithsonian will eventually gain closer control over building lighting systems. The system conserves electricity by turning lights on and off as use fluctuates. Automated lighting controls are now in place at the Air and Space Building, the American History Building, the Natural History Building, and the Quadrangle Complex. The Smithsonian plans to install such a system in the American Art and Portrait Gallery Building by FY 1993 and in later years in other major buildings.

RENTAL SPACE - For FY 1993 the central rental account, included in the line-item for the Office of Plant Services, requires \$500,000 for uncontrollable expenses. This account provides for the Federal portion of the rental expenses for program and administrative activities located in L'Enfant Plaza, the Smithsonian Institution Service Center at 1111

North Capitol Street, the research bureaus of the Archives of American Art in New York City and Boston, Massachusetts, and storage at the Fullerton Industrial Park in Springfield, Virginia. The amounts below reflect projected costs for rental space at these sites:

FEDERAL RENTAL PROGRAM ADMINISTERED BY THE OFFICE OF PLANT SERVICES

FY 1991 - FY 1993

(\$000's)

	FY 1991		FY 1992		FY 1993	
	<u>Estimated Cost</u>		<u>Estimated Cost</u>		<u>Estimated Cost</u>	
	<u>Federal</u>	<u>Trust</u>	<u>Federal</u>	<u>Trust</u>	<u>Federal</u>	<u>Trust</u>
L'Enfant Plaza	\$1,733	\$1,418	\$1,815	\$1,480	\$2,063	\$1,567
North Capitol Street	1,227	141	1,149	148	1,510	181
Archives of American Art:						
- New York	135	--	265	--	285	--
- Boston	10	--	15	--	15	--
Fullerton	<u>293</u>	<u>--</u>	<u>309</u>	<u>--</u>	<u>330</u>	<u>--</u>
Total Costs	\$3,398	\$1,559	\$3,553	\$1,628	\$4,203	\$1,748
Base	3,398		3,553		3,703*	
Surplus/(Deficit)	--		--		(500)	

*Includes \$150,000 for new administrative space requested in FY 1992 for the Office of Inspector General.

The FY 1993 estimate for Federal rental costs for L'Enfant Plaza reflects annual cost increases specified in the lease agreement and takes into account the offsetting Trust-fund contribution for shared administrative activities and office space occupied by the specific auxiliary activities on the Mall.

The projected rental expense for space at 1111 North Capitol Street includes the cost increase associated with a negotiated one-year extension of the current lease and a significant property tax increase. The allocation policy on administrative and programmatic space also governs the Federal/Trust apportionment of costs for this location.

The projected rental expense for the Archives of American Art represents funding requirements for the spaces occupied in New York and Boston. The increase for the New York office reflects inflationary adjustments in the rental rate.

Finally, the projected rental expense for Fullerton reflects the continuing cost of storage space for the Smithsonian Institution Archives and the National Museum of American History.

For FY 1993, the projected Federal share of the central rental account is \$4,203,000. The Institution's Federal base is \$3,703,000 in FY 1992. Therefore, the Smithsonian requires an additional amount of \$500,000 to defray space rental costs at these locations in FY 1993.

ADMINISTRATIVE SERVICE CENTER - For FY 1993, the Smithsonian seeks 7 workyears and \$4,000,000 to procure administrative facilities to replace the current leased warehouse facility located at 1111 North Capitol Street. The current lease expires in fall 1992, and the building size and condition are inadequate to meet the present requirements of the Institution. A thorough review of space requirements indicates the Administrative Service Center will be approximately 500,000 gross square feet to be constructed on a site convenient to the Mall. The facility will house logistical and administrative services supporting the Institution's programs and staff. Activities to be reassigned from the present facility to the Center will include warehouse, shipping and receiving, printing and binding shops, and library and archival holdings. Additionally, the Center will house administrative functions now occupying leased space at L'Enfant Plaza and craft and light manufacturing shops and computer facilities presently located in Mall museums. Overall, approximately 220,000 gross square feet of commercially leased space will be vacated, with the associated rental costs available to be reprogrammed for acquisition and maintenance of the Center.

The estimated cost of land acquisition and construction for the Center is \$60 million. Of this amount, approximately \$10 million will be advanced from the Institution's General Unrestricted Trust funds, with the balance to be obtained from private lending sources. The loans are to be repaid over thirty years at an estimated annual cost of \$6 million. As ownership will occur upon completion of construction, substantial savings will be realized in comparison to a thirty-year lease/lease purchase arrangement or in comparison to remaining in present leased space with the associated annual increases. Estimated savings from ownership, as compared with any of the aforementioned alternatives, are projected to be in excess of \$50 million.

The expected arrangement of a graduated repayment of loans for land and construction costs will result in the full annual payment of \$6 million phasing in over several years. This will coincide with the expiration of commercial leases presently housing administrative facilities, freeing these rental appropriations for application to the operation of the Center. When fully realized, estimated base funding available from rent will amount to \$3 million.

The requested 7 workyears (\$238,000) will provide the Office of Plant Services (OPlantS) with 27 positions for the operation of the Administrative Service Center for the period August through September, 1993. The larger facility will require additional personnel to operate and maintain building systems and to provide support services, such as mail delivery to staff housed in the facility. The remaining 20 workyears to annualize the request will be included in the FY 1994 budget submission. In addition to staff support for this new facility, funding sought in the FY 1993 budget also will be used for utilities (\$266,000); maintenance and custodial contracts and supplies (\$200,000); security contracts (\$106,000); relocation expenses (\$100,000); equipment and communications and security systems (\$1,090,000); and initial costs of amortization (\$2,000,000).

INFLATION - FY 1993 AND PRIOR YEARS - For FY 1993, the Smithsonian requests an amount of \$14,750,000 to offset the inflation-related erosion of the Institution's purchasing power that has occurred over the past seven years for non-personnel expenses. The amount requested was calculated using the actual Consumer Price Index and the estimates provided by OMB. Because the Institution has not received any increases to its Federal appropriation to cover general inflation since 1987, it has been forced to reduce basic operating support to less than adequate levels. The cumulative effect has seriously eroded research, exhibitions, collections management, education, and public service programs as

well as facilities and administrative services. Over the last few years, the Institution has had to intentionally leave positions unfilled as a cost-saving measure and the non-personnel budget has been an inflexible, hold-the-line, maintenance budget. The following are examples of supplies and services affected by inflation over the past year.

Exhibitions - Inflationary increases for construction materials, equipment, and supplies place a strain on the base resources needed to maintain an active exhibition program. The table below illustrates cost increases for items used extensively in exhibit preparation.

Exhibition Materials

Item	FY 1990 Cost	FY 1991 Cost	Percentage Increase
White latex paint, gallon	\$18.63	\$19.20	3%
Plexiglas, white, 1/4x4'x8'	119.04	142.72	20%
Masking tape	1.50	2.58	72%
Elmer's Glue, gallon	6.47	7.16	11%
Abar Plastics, 8' roll sheeting	19.71	25.20	28%
35mm magnetic stock, 600 ft.	10.00	12.50	25%

Collections Management - Comprehensive collections management programs necessary for the preservation of the objects at the Institution are also subject to inflationary effects. The table below illustrates the effects of inflation on items for preservation.

Collections Management Equipment and Supplies

Item	FY 1990 Cost	FY 1991 Cost	Percentage Increase
Cheesecloth, case	\$210.00	\$241.50	15%
PVC disposable gloves (100)	11.61	12.95	12%
Small bubble pack (48"x750' roll)	240.00	265.00	10%
Artifact handling gloves (12)	9.60	12.05	26%
Alcohol, Ethyl (barrel)	173.25	184.25	6%
Noxfish, gallon	37.65	39.90	6%
Insect pins	29.44	31.87	8%
Lig-free Type II boxes, (20)	6.60	7.40	12%
File folders, archival (500)	89.00	102.00	15%
Film, Tri-X, per pkg.	39.80	43.25	9%
Linen thread (tag ties)	35.35	38.95	10%

Research - The Smithsonian's strength as a research institution is bolstered by the quality of its research support operations. The Institution's researchers depend on research tools, the latest technology in equipment and scientific instruments, books, and research journals. Access to up-to-date information published in specialized journals is the lifeblood of research at the Smithsonian. Cost increases of 30 percent in journal subscriptions between FY 1990 and FY 1992 have drastically reduced the Libraries' ability to supply researchers with the information they need. More than 500 subscriptions have

been canceled since 1987. Funds normally assigned to book purchases must now be used for journal subscriptions. Thus, annual purchases of new books, especially important for research in history and the arts, have fallen by 40 percent for the same period. Without recovering the impact of inflation against buying power, the Smithsonian will inevitably lose credibility as a research facility due to less than adequate support services. The table below illustrates examples of increases for research-related items for museums.

Research Equipment and Supplies

Item	FY 1990 Cost	FY 1991 Cost	Percentage Increase
Glycerin (500ml)	13.50	16.30	21%
Stopper, Polyethylene 12 & 13mm	16.00	20.00	25%
Water filter service (Ultrapure)	366.00	406.00	11%
<u>Anthropologie. Int'l Journal for the Science of Man</u>	50.78	58.14	14%
<u>American Chemical Society Journal</u>	645.75	771.00	19%
Nitrogen (cyl)	21.48	24.76	15%
Tektronix, Spectrom Analyzer	10,050.00	10,640.00	6%
Edwards, booster comb. pump	14,585.00	15,355.00	5%
Edwards, Inlet duct filter	1,620.00	1,705.00	5%
HP, Synthesiser sweep generator	38,058.00	39,217.00	3%
Polaroid film	10.70	11.50	8%
Carbon Dioxide, (per tank)	29.80	32.95	11%
Coverglass, 12mm (1/2'), 50	2.59	3.35	29%
Film reels and cans, plastic	8.50	10.63	25%

Facilities Management and Administration - All programs at the Smithsonian are affected by the services provided by facilities management and administrative offices. These offices are responsible for the maintenance and protection of the Institution's facilities, collections, visitors, and staff. Medical supplies and equipment to support the Institution's occupational health program continue to increase. The cost for service and maintenance of equipment critical for security operations, e.g., communications equipment, continues to escalate. Maintenance of the facilities requires regular purchase of custodial supplies and equipment in addition to services, all of which are subject to price increases. Examples of facilities management supplies and services subject to inflation are identified below:

Administrative and Buildings Maintenance Supplies and Contracts

Item	FY 1990 Cost	FY 1991 Cost	Percentage Increase
Fire Extinguisher Service	3,600.00	5,600.00	55%
Laundry for guards	39,500.00	41,658.00	5%
Yellow fever vaccine, 5 units	104.05	130.00	25%
Rabies vaccine (lcc unit dose)	75.00	82.00	9%
Wheelchair repairs	900.00	1000.00	11%
Copier rental	20,240.00	27,360.00	35%
Paper towels, box	12.60	14.32	13%
Glass cleaner	22.78	23.80	4%
LMC liquid shampoo, 32 gal.	6.49	13.68	111%

For FY 1993, the Institution seeks \$14,750,000 to help offset the base erosion resulting from inflation. This amount represents the cumulative inflation of the Institution's Federal non-personnel budget from FY 1988 through FY 1993, excluding utilities, rent, Major Scientific Instrumentation, and Museum Support Center equipment and move costs.

The impact of inflation is equivalent to a significant reduction each year to the base resources of all Smithsonian organizational units. As a consequence, inflation affects scientific, research, educational and public programs, and the care and conservation of the Institution's collections.

RESTORATION OF PRIOR YEAR REDUCTIONS - There are many factors that have had the cumulative effect of eroding the Institution's funding base, including inflation and unfunded FERS costs. Several other items that have contributed to the Institution's "base erosion" are the "Grade Target Reduction" initiated in FY 1985 and completed in FY 1989 (\$1,492,000); the FY 1990 Gramm-Rudman-Hollings sequestration (\$3,074,000); and the more recent across-the-board reduction contained in the FY 1991 Interior and Related Agencies Appropriation (\$1,438,000). These reductions have eliminated all bureau and office funding flexibility to absorb the costs of a wide range of basic items such as hazardous waste removal and corrections of safety deficiencies and have had a negative impact on existing programs. The Institution requests restoration of these funds.

RESEARCH

OFFICE OF THE ASSISTANT SECRETARY FOR RESEARCH

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	37	1,676	7	612	-	2,193	-	677	2	258
FY 1992 Estimate	37	1,756	7	588	-	2,373	-	578	2	224
FY 1993 Estimate	44	2,586	7	588	-	2,383	-	580	2	231

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Office of the Assistant Secretary for Research (OASR) seeks to facilitate, strengthen, and plan for the Smithsonian Institution's worldwide research efforts and research support activities. The Office develops policies and fosters an environment conducive to the creation and dissemination of high-quality, original scholarship; promotes research as an essential endeavor that contributes to knowledge and creates a heightened appreciation of the relevance of ideas in modern society; seeks to build an excellent research staff that reflects the Nation's diverse cultural heritage and the Institution's scholarly strengths; and fosters effective linkages between scholarship and other Institutional efforts, especially public programs and global change initiatives. Also included in this line-item are the Smithsonian Institution Scientific Diving Program, the Joseph Henry Papers Project, the American Studies Program, and the Office of Fellowships and Grants.

The Smithsonian Institution Scientific Diving Program oversees the diving activities of more than 200 Smithsonian staff and related investigators, ensuring their safety and training in compliance with the Department of Labor's Occupational Safety and Health Administration (OSHA) regulations. The Joseph Henry Papers Project researches and publishes the manuscripts of Joseph Henry, the first Secretary of the Smithsonian and a leading 19th-century American physicist. The American Studies Program conducts a graduate program in American culture, incorporating course work at the Smithsonian. The Office of Fellowships and Grants manages and administers the Institution's programs of research grants, fellowships, and other scholarly appointments.

For FY 1993, OASR requests an increase of 4 workyears and \$665,000 to provide a diving safety officer and support for the Scientific Diving Program (1 workyear and \$115,000) and support for Institutional memberships in Internet, Research Libraries Information Network (RLIN), Coalition for Networked Information to Advance Scholarships and Intellectual Productivity (CNI), and Legi-Slate (3 workyears and \$550,000). The Joseph Henry Papers requests an increase of 1 workyear and \$74,000 to provide a research assistant (1 workyear and \$54,000) and for restoration, conservation, and preservation of the Alexander Graham Bell-Joseph Henry Library collection (\$20,000). The Office of Fellowships and Grants

requests 2 workyears and \$91,000 to provide clerical support staff (1 workyear and \$25,000); a fellowship/internship coordinator (1 workyear and \$51,000); and printing and distribution of a guide to research opportunities (\$15,000).

PROGRAM:

I. Office of the Assistant Secretary for Research - With base funding of 20 workyears and \$920,000, the Office of the Assistant Secretary for Research (OASR), in concert with the Secretary and other appropriate management staff, supervises the research activities of the Institution. The Office is responsible for enhancing the Institution's scholarly environment and productivity by initiating cyclical outside evaluations of scholarly activities; fostering regular reviews of individual scholars' performance; providing increased research opportunities through internal competitive funds; creating and coordinating central programs that support individual and group research efforts; broadening the base of funding for research through both Federal and private funds; assessing programmatic effectiveness and making recommendations for curtailing selected activities; deepening and selectively expanding the Institution's activities in areas of high Institutional priority; and establishing joint programs, appointments, proper communication networks, and cooperative efforts with other scholarly institutions, including the Nation's universities. This Office is also responsible for tracking external research trends and ensuring that they are appropriately coordinated with current Smithsonian activities. OASR serves as the major Institutional liaison for research centers in the United States and abroad. The Office oversees and coordinates scientific diving activities that support collection and study of underwater subjects and environments by a variety of Smithsonian research bureaus. In addition, the Office strives to improve the dissemination of the Institution's research findings to the general public and to specialized audiences.

II. Joseph Henry Papers Project - With base funding of 6 workyears and \$312,000, the Joseph Henry Papers Project (JHPP) conducts interpretive historical research on the life and times of Joseph Henry, a pioneer American physicist and the first Secretary of the Smithsonian Institution; supports internal and external scholarly research on 19th-century American science through the development of data bases and the management of collections; and maintains the Alexander Graham Bell-Joseph Henry Library. The Henry Papers is a source of unpublished and little-known letters and papers, collected from 30 foreign countries and 328 depositories in the United States. The documents and commentary provided by the editors give insight into the history of science, the institutional and social structure of the scientific community in the 19th century, and the history of the Smithsonian Institution.

The Joseph Henry Papers Project completed the sixth volume of the Henry Papers, detailing Henry's experimentation in electricity and magnetism at the College of New Jersey (now Princeton University). Volume 6 also documents Henry's election as the first Secretary of the Smithsonian. The project staff completed text editing for volume 7, which documents the years 1847-49. Publication objectives of the Joseph Henry Papers Project include a 15-volume letterpress edition, a "Guide to the Resources on Joseph Henry Available at the Smithsonian Institution," and special publications for a more general audience.

III. American Studies Program - With base funding of 2 workyears and \$121,000, the American Studies Program (ASP) sponsors a graduate program in American material culture--a discipline of importance to the Smithsonian stemming from its unique holdings--in

cooperation with various universities located in the Washington, D.C., area and in other cities. The director of the program and cooperating scholars teach three or four seminars a year to graduate students in American studies or American history departments of affiliated universities for academic credit. Through the program, both scholars and students pursue American studies using the unique resources of experts, collections, manuscripts, and books available in various bureaus of the Smithsonian Institution. These scholars and students disseminate the knowledge acquired during course study and research performed. In addition, the Program fosters research on American studies within the Institution and elsewhere.

IV. Office of Fellowships and Grants - With base funding of 9 workyears and \$403,000, the Office of Fellowships and Grants (OFG) manages the Institution's centralized fellowship and internship programs, all other stipend appointments, and additional significant programs that support research by Smithsonian scholars and their collaborators.

Through these programs, students and scholars from throughout the world visit the Institution and use its varied resources. OFG receives more than 1,500 applications and administers approximately 960 appointments and 55 grants. In FY 1991, OFG awarded 116 pre- and post-doctoral fellowships through the Institution-wide program. Thirty-one of these recipients were foreign students and scholars from 21 countries. In addition, Federal and Trust funds allocated to the bureaus supported 185 short- and long-term awards. Under the Short-term Visitor Program, 145 persons representing 34 countries came to the Institution. The Office also administered internship stipend awards for 163 students in FY 1991.

OFG administers programs to increase minority participation in Smithsonian research disciplines and educational activities. Forty-five students joined ongoing research and museum studies in the Minority Internship Program. The Native-American Awards Program appointed 17 Native-American students and scholars to collaborate with the staff and work on Native-American resources and activities at the Institution. Under the Faculty Fellowship Program, five minority faculty members received awards to conduct research in residence.

Several programs provide scholarly support to Smithsonian professional staff. Twenty-four research proposals under the Scholarly Studies Program received grants. A workshop program provides funding to Smithsonian staff to organize seminars and symposia to bring together scholars from around the world to the Institution to collaborate and discuss a variety of subjects. Eight workshops were supported in FY 1991. Two James E. Webb Fellowships were awarded, one to a Smithsonian staff member and one to an outside recipient.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, OASR requests an increase of 4 workyears and \$665,000 to provide a diving safety officer and support for the Scientific Diving Program (1 workyear and \$115,000) and support for Institutional memberships in Internet, Research Libraries Information Network (RLIN), Coalition for Networked Information to Advance Scholarships and Intellectual Productivity (CNI), and Legi-Slate (3 workyears and \$550,000). The Joseph Henry Papers requests an increase of 1 workyear and \$74,000 to provide a research assistant (1 workyear and \$54,000) and for restoration, conservation, and preservation of the Alexander Graham Bell-Joseph Henry Library collection (\$20,000). The Office of Fellowships and Grants requests 2 workyears and \$91,000 to provide clerical support staff (1 workyear and \$25,000); a fellowship/internship coordinator (1 workyear and \$51,000); and printing and distribution of a guide to research opportunities (\$15,000).

I. Office of the Assistant Secretary for Research:

Diving Safety Officer and Support for the Diving Program (1 workyear and \$115,000)

- Smithsonian scientific diving research projects have increased steadily over the last five years. More than 120 Smithsonian scholars currently use SCUBA as an integral tool in underwater research. In addition to this large number of Smithsonian employees requiring diving skills, more than 100 visiting researchers dive annually under Smithsonian Institution auspices in support of collaborative research activities. The scope of the Institution's Scientific Diving Program makes it the largest civilian diving program in the United States.

The U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) published guidelines for scientific diving on January 9, 1985 (29CFR Part 1910, Federal Register, vol. 50, no. 6: 1046-50). Adherence to these guidelines allows scientific diving programs to avail themselves of the exemption from commercial diving regulations, which are complex and burdensome to the scientific enterprise. Under the OSHA rules, scientific diving programs must appoint a diving officer and a diving control board that "consists of a majority of active scientific divers and has autonomous and absolute authority over the scientific diving program's operations." An internal Smithsonian management analysis report of May 1989 reconfirmed the immediate need to hire a full-time scientific diving officer and to allocate additional support funds to ensure adherence to the OSHA guidelines and the accepted standard of practice of the scientific diving community.

To comply with OSHA guidelines, OASR requests \$115,000 to support a full-time scientific diving officer (1 workyear and \$72,000). This increase will also provide support funds (\$43,000) for the diving program, including equipment, supplies, and travel to the various field research sites throughout the world. The scientific diving officer will monitor compliance with Smithsonian scientific diving policies, regulations, and procedures and ensure reciprocity agreements with nationally recognized scientific diving institutions. In coordination with the Smithsonian Diving Control Board, the scientific diving officer will train and certify divers, approve dive plans and operations, inspect dive sites, develop emergency evacuation plans, and administer the program.

The position of a scientific diving officer will ensure the safety of Smithsonian diving scientists and coordinate diving activities among all bureaus of the Smithsonian.

Institutional Memberships in Internet, Research Libraries Information Network (RLIN), Coalition for Networked Information to Advance Scholarships and Intellectual Productivity (CNI), and Legi-Slate (3 workyears and \$550,000) - The development of high-speed information networks over the past decade has resulted in new and unprecedented means for scholars to disseminate and gain access to information electronically on a wide scale. These developments also have led to greater economy of scale and efficiency in reducing the need for scholars to travel to other locations to undertake research or engage in interactions with colleagues. While the Smithsonian possesses an excellent internal electronic mail system, the Institution acknowledges deficiencies in its ability to connect with national and international communications networks.

To address these deficiencies and take advantage of what are now standard information systems in major universities and research institutions, the Smithsonian proposes institutional membership in the following national systems and information repositories, which electronically provide research data to scholars and administrators: Internet,

Research Libraries Information Network (RLIN), Coalition for Networked Information to Advance Scholarship and Intellectual Productivity (CNI), and Legi-Slate. These memberships will serve the entire Smithsonian community, including scholars, librarians, archivists, and others in need of specialized information. They will also greatly enhance the Institution's access to vital research data held elsewhere. The operational systems linking the Smithsonian Institution to these systems will be coordinated through the existing central computer platforms available in the Smithsonian's Office of Information Resource Management.

OASR requests 2 workyears and \$175,000 for participation in Internet. Internet is a major international electronic communications network coordinated in the United States by the National Science Foundation (NSF). The requested increase will provide for the basic membership fee (\$40,000 per annum); purchase and continual update of hardware/software to connect and maintain Smithsonian users on Internet (\$58,000); a systems administrator (1 workyear and \$42,000); and computer technician (1 workyear and \$35,000).

The Smithsonian requests 1 workyear and \$357,000 for participation in the Research Libraries Information Network. The Research Libraries Information Network (RLIN) is a major national bibliographic system managed by the Research Libraries Group, Inc., a consortium of major U.S. universities and research institutions. RLIN is acknowledged as a singular source of research information for scholars in a wide variety of academic fields across the nation. The requested increase will provide for Institutional membership (\$25,000) in the Research Libraries Group (RLG), the governing body for RLIN; search fees (\$34,000); purchase, installation, and continual update of hardware/software to connect and maintain Smithsonian users on RLIN (\$175,000); supplies and materials (\$56,000); travel and training (\$25,000); and a systems coordinator (1 workyear and \$42,000).

The Smithsonian requests \$5,000 for membership in the Coalition for Networked Information to Advance Scholarship and Intellectual Productivity. Smithsonian membership in CNI is crucial if the Institution is to be informed about and involved in the development of policy for the sharing and management of information in support of research and education nationally. Membership in CNI will provide an additional means to disseminate Smithsonian holdings to the public. The requested increase will provide for CNI annual membership fees. CNI is a consortium of 134 colleges, universities, and information industry representatives. CNI serves as the principal coordinating body for institutions of higher education and the research community in planning for and oversight of existing and future information networks and so plays a vital role in enriching scholarship and enhancing intellectual productivity.

Legi-Slate is an on-line information service that permits legislative tracking and text replication, functions which would greatly extend the Institution's ability to track and provide current, timely, and accurate legislative information to scholars and managers throughout the Smithsonian. Access to current and accurate legislative information through this subscription service will ensure the Institution's ability to anticipate and respond to Congressional actions concerning the Smithsonian, including education and science policy and other interests and priorities. The requested increase (\$13,000) will provide for annual subscription fees to Legi-Slate.

Smithsonian participation in the four networks described will speed the Institution's retrieval of data critical to its own research and public functions and the dissemination of the results of its scholarly work to a wide national and international community. The

ability to take advantage of present technology at a modest cost ensures the Institution's continuing preeminence in its acknowledged fields of competency.

II. Joseph Henry Papers Project:

Research Assistant/Historian (1 workyear and \$54,000) - With interest in Joseph Henry and the history of the Smithsonian increasing among both outside scholars and the general public, the staff of the Joseph Henry Papers Project is accelerating the production of the letterpress volumes of The Papers of Joseph Henry. To facilitate scholarly research into Henry and his era, the project is developing a "Guide to the Resources on Joseph Henry Available at the Smithsonian Institution." The staff is also providing assistance for a biography of Henry aimed at more general audiences.

The requested funds will be used to hire a research/historian assistant (1 workyear and \$54,000) to conduct these tasks, freeing the senior-staff to concentrate on analytical work and permitting the most effective use of senior staff training, knowledge, and experience. The duties of the research assistant will include biographical identification, extraction of information from standard reference works, surveys of newspapers and journals, and citation verification. The research assistant will also confirm the location of manuscripts, artifacts, and photographs for the "Guide to Resources."

The addition of a research assistant will enable the Joseph Henry Papers Project to accelerate production in the most efficient and effective manner.

Restoration, Conservation, and Preservation of the Alexander Graham Bell-Joseph Henry Library Collection (\$20,000) - The Joseph Henry Papers Project staff and outside scholars concerned with developments in 19th-century American science use the Alexander Graham Bell-Joseph Henry Library collection in their research. The majority of the collection items were published between 1815 and 1875, with some publications dating back to 1700. The staff works to maintain a fine balance between use and preservation of the collections. Many of the books in the Library suffer from broken spines, frayed bindings, brittle paper, and loose pages. These conditions limit the handling of these rare, annotated volumes. The restoration, conservation, and preservation of the Bell-Henry Library will allow staff and scholars greater access to this important collection.

The Henry Papers began its restoration, conservation, and preservation program by removing the collections of the Bell-Henry Library from exposure to sunlight, daily traffic, and fluorescent lighting. An expert is needed to evaluate the condition of the volumes and make recommendations for preservation.

The requested funds (\$20,000) will allow staff to contract with book conservators to conduct a volume-by-volume examination of the physical condition of the Bell-Henry Library. These experts will identify the damage, evaluate the feasibility of restoring items, consider the appropriateness of transferring texts to microform, and discuss environmental conditions. The conclusions will provide clear priorities for future resource allocations and budget requests.

The restoration, conservation, and preservation of books are essential to preserve information for future generations. The collections of the Bell-Henry Library offer scholars a unique insight into the history of science, technology, and the heritage of the Smithsonian. Therefore, these collections need to be properly cared for and preserved.

III. Office of Fellowships and Grants:

Clerical Support (1 workyear and \$25,000) - OFG continues to maintain and support the Institution's overall scholarly environment. During the past six years, the research and educational programs of the Office have grown tremendously. OFG's outreach activities have increased and are attracting a larger audience of students and scholars requesting information about opportunities at the Smithsonian. For example, written inquiries alone have increased from 4,100 in FY 1986 to 5,500 in FY 1990.

The requested increase of 1 workyear and \$25,000 will permit the hiring of a clerk to provide the assistance necessary to respond to the needs of the public, Smithsonian staff, in-residence fellows, students, and other visitors. The incumbent will also provide support service to the program staff of the Office.

Fellowship/Internship Coordinator (1 workyear and \$51,000) - New fellowship and internship opportunities have dramatically grown in the past five years, and fellowship and internship appointments at the Smithsonian have risen from 545 in FY 1986 to 960 in FY 1991. To coordinate these growing programs more closely and to enhance program activities, OFG requests a fellowship/internship coordinator (1 workyear and \$51,000). The incumbent will also establish joint programs and seminars with colleges and universities, graduate-training programs, and other related initiatives.

Guide to Research Opportunities (\$15,000) - Smithsonian Opportunities for Research Study describes the Smithsonian museums, research facilities, and other support offices. It also lists the research staff and their specialties. This much-used publication is the only comprehensive guide to the Institution's programs and serves as a ready reference to all who are interested in the Smithsonian's research programs and intellectual resources. OFG distributes this publication throughout the United States and abroad in response to inquiries about educational opportunities at the Institution.

The requested increase of \$15,000 will permit OFG to publish and distribute Smithsonian Opportunities for Research Study.

NONAPPROPRIATED SOURCES OF FUNDING:

I. Office of the Assistant Secretary for Research:

Unrestricted General and Special Purpose Funds - Annual allotments provide these funds that support the salary, benefits, and expenses of the Assistant Secretary for Research. An allotment also supports three important international foundations that operate field-research stations used by Smithsonian staff members, as well as others in the scientific community. The Smithsonian also provides support for the exchange of scholars and scientific information between the Smithsonian and scientific organizations in other nations. A Special Purpose fund supports cooperative agreements between the Smithsonian and the Nation's universities. The Research Opportunities Fund supports unanticipated general research for Smithsonian scholars.

II. Joseph Henry Papers Project:

Unrestricted General and Special Purpose Funds - Funds are available from the Smithsonian's Research Opportunities Fund to support research projects.

Restricted Funds - The Smith College Tuition Fund defrays travel and auxiliary-support costs for staff, interns, and volunteers, as well as stationery supplies. Support from the National Academy of Sciences pays for incidental programmatic items not otherwise funded, including journal subscriptions and additions to the Henry Papers research collections. A grant from the Ida Hornstein Reingold Memorial Fund supports the scholarly activities of the Joseph Henry Papers Project.

III. American Studies Program:

Unrestricted General and Special Purpose Funds - The American Studies Program receives tuition reimbursement from cooperating universities, principally George Washington University and the University of Maryland, College Park, whose graduate students take courses offered by the American Studies Program. The tuition reimbursement refunds the Smithsonian Institution for the use of its facilities by the students participating in Smithsonian classes and, in addition, provides honoraria and reimbursement for the services of outside experts participating in the Program.

IV. Office of Fellowships and Grants:

Unrestricted General and Special Purpose Funds - These funds are primarily for the Institution-wide fellowship programs. Scholars and students on short visits also receive support. A program allotment provides funding for a portion of the administrative expenses of the Office of Fellowships and Grants. The Regents Fellowship Program continues to bring distinguished visiting scholars to the Institution.

In addition, Special Purpose funds provide for minority internships and faculty fellowships, minority students pursuing graduate degrees under the Education Fellowship Program, and the Native-American Awards Program. The Scholarly Studies Program encourages research by Smithsonian staff in the sciences, arts, and humanities.

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	118	12,040	48	5,348	51	4,971	-	-	132	32,528
FY 1992 Estimate	130	13,649	56	5,620	51	4,662	-	-	144	34,250
FY 1993 Estimate	143	14,882	56	5,644	51	4,655	-	-	153	37,800

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Smithsonian Astrophysical Observatory (SAO) conducts research in astronomy and astrophysics to increase knowledge and understanding of the universe, its origin, and its contents, and to communicate this information through publications, teaching, and public presentations. SAO conducts research in diverse fields that include the Sun, stars, galaxies, clusters of galaxies, quasars, the large-scale structure of the universe, and the formation, current structure, and evolution of planets, as well as laboratory astrophysics, atmospheric physics, and geophysics. SAO research has a major impact in the worldwide scientific community and has helped the United States maintain world leadership in astrophysical research. SAO coordinates its varied scientific program with the Harvard College Observatory, and together the two observatories form the Center for Astrophysics in Cambridge, Massachusetts. In addition, SAO operates the Oak Ridge Observatory in Massachusetts and the Fred L. Whipple Observatory in Arizona, the latter the site of the Multiple Mirror Telescope, a joint project with the University of Arizona.

For FY 1993, SAO requests an increase of 8 workyears and \$999,000 for scientific and technical staff support (2 workyears and \$168,000); global change studies (4 workyears and \$550,000); infrastructure needs at the Fred L. Whipple Observatory (\$145,000); science education (1 workyear and \$86,000); and human resource management (1 workyear and \$50,000).

The Institution also requests an increase in funding in the Major Scientific Instrumentation line-item for the nonpersonnel support to continue the construction of the submillimeter wavelength telescope array and the conversion of the Multiple Mirror Telescope to an instrument with a single mirror, 6.5 meters in diameter. In addition, the FY 1993 request for SAO includes an increase of 5 workyears and \$234,000 for personnel costs and rent associated with the submillimeter array. Since this increase is related to the Major Scientific Instrumentation request, the justification for these positions appears in the Major Scientific Instrumentation section of the budget.

PROGRAM - The Smithsonian Astrophysical Observatory is a member of the Center for Astrophysics (CfA) based at Cambridge, Massachusetts, where, in collaboration with the Harvard College Observatory, it pursues a diverse program of research organized by the

following disciplines: atomic and molecular physics, high-energy astrophysics, optical and infrared astronomy, planetary sciences, radio and geoastronomy, solar and stellar physics, and theoretical astrophysics. Data-gathering facilities include the Fred Lawrence Whipple Observatory in Arizona and the Oak Ridge Observatory in Massachusetts, as well as a millimeter-wave radio astronomy installation at the CfA headquarters.

Research Highlights - In FY 1991, the centennial of its founding, SAO made significant advances in several program areas. Among the highlights of this research were:

- The National Aeronautics and Space Administration selected SAO to plan, develop, and operate the international science center that will receive, analyze, and archive data from the Advanced X-Ray Astrophysics Facility (AXAF), now scheduled for launch in 1998.
- Precise measurement at SAO of the temperature and density of gas in a distant cluster of galaxies has provided a way to determine directly the expansion rate of the universe--or Hubble Constant--and produced a result suggesting the universe may be closer to 20 billion than to ten billion years old.
- A rocket-borne x-ray telescope developed by SAO and IBM gathered data during the solar eclipse of July 11 that should result in the first three-dimensional model of the solar corona linking density and temperature variations with structure in the extended atmosphere.
- Researchers at SAO's Whipple Observatory made the first confirmed detection of gamma rays from the Crab Nebula and established that object as a "standard candle" for ground-based observers of the still-enigmatic gamma rays that bathe the Earth.
- Using a clever combination of laboratory experiments and radio observations of our galaxy, SAO scientists discovered and identified a new sequence of giant carbon chain molecules in space.
- Radio observations of ammonia emission from molecular clouds surrounding the nucleus of the Milky Way provided evidence that a gigantic streamer of molecular material is being sucked by gravity into the core of our galaxy, where it "feeds" the central mass, thought to be a giant black hole.
- Analysis by SAO scientists of radar images of Venus indicates that outflows of fluid material from fractured craters were triggered by meteorite impacts.
- In a landmark exchange of East-West timekeeping technology, Soviet-built atomic hydrogen maser clocks were brought to SAO in Cambridge and found to be comparable in stability with similar devices built at SAO for applications in space tracking, radio astronomy, and global navigation.

In support of this research and other initiatives for the future, SAO continued development of the submillimeter wavelength telescope array and the conversion of the Multiple Mirror Telescope to a single-mirror instrument 6.5 meters in diameter. A new 48-inch telescope, designed for stellar and extragalactic astronomy, was put into operation at SAO's Whipple Observatory in FY 1991. Assembly of a second, 11-meter-diameter, gamma-ray detector also began at the Whipple Observatory in this period.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, SAO requests an increase of 8 workyears and \$999,000 for scientific and technical staff support (2 workyears and \$168,000); global change studies (4 workyears and \$550,000); infrastructure needs at the Fred L. Whipple Observatory (\$145,000); science education (1 workyear and \$86,000); and human resource management (1 workyear and \$50,000).

The Institution also requests an increase in funding in the Major Scientific Instrumentation line-item for the nonpersonnel support to continue the construction of the submillimeter wavelength telescope array and the conversion of the Multiple Mirror Telescope to an instrument with a single mirror, 6.5 meters in diameter. In addition, the FY 1993 request for SAO includes an increase of 5 workyears and \$234,000 for personnel costs and rent associated with the submillimeter array. Since this increase is related to the Major Scientific Instrumentation request, the justification for these positions appears in the Major Scientific Instrumentation section of the budget.

Scientific and Technical Staff (2 workyears and \$168,000) - Unique among the physical sciences, astronomy deals with phenomena that can be studied only indirectly and at long distance. Astronomy's real "laboratories" are stars and galaxies billions of kilometers away. Usually the only physical evidence available to researchers is the faint radiation that has traveled across vast spaces--and has been changed, altered, and distorted by dust, gas, and other particles and fields along the way. To capture this feeble light and, more important, to interpret its enigmatic messages, require talented and dedicated professionals trained in the special technical and scientific skills of modern astronomy and astrophysics.

Younger scientists are the lifeblood of a research institution. Not only do these people represent the future of the science, but they bring the new ideas and innovative approaches that SAO needs to continue to flourish. SAO's future eminence in research depends upon its ability to attract young scientists. SAO, however, has neither funds nor positions to attract scientists who have already held one or two postdoctoral positions and are now looking for an appointment comparable to a university position at the junior faculty level.

To strengthen its research program, SAO requests funds to hire two junior scientists (2 workyears and \$168,000). The exact areas in which these scientists will work will be determined by the best people who are available at the time a nationwide search is conducted to fill these positions.

Despite extraordinary advances in technology, talented, dedicated investigators remain the true strength of SAO's research program. This request will give SAO the funds and flexibility needed to attract top young scientists.

Global Change Studies (4 workyears and \$550,000) - Global change results from complex interactions among the Earth, its atmosphere, and the Sun. Much of the available data upon which atmospheric models must be based is of limited accuracy. Significant advances can be made in modeling the atmosphere through a combination of atmospheric, laboratory, and theoretical studies. A three-part program will enhance understanding of the atmosphere's response to human-induced change through measurements of stratospheric species via instruments flown on balloons, aircraft, and satellites; laboratory studies of atmospheric species and active pollutants; and theoretical studies of atmospheric composition and processes. SAO is unique in having strength in all three research areas.

The SAO program of balloon-borne remote sensing of the stratosphere is the only program in the world that simultaneously measures the abundances of complete families of species related by complex chemical reactions. Instruments are currently being developed at SAO to fly on the European Space Agency Polar Platform. Such instrumentation can play a vital role in determining sources, sinks, and distributions of greenhouse gases, atmospheric pollutants, and aerosols. Moreover, the best available laboratory ultraviolet photoabsorption data for the important atmospheric species O_3 , NO , SO_2 , and O_2 have been obtained by SAO scientists.

Even more accurate measurements are needed to predict the destruction of molecules such as ozone and the screening of the Earth's surface from harmful radiation. A theoretical effort involving development of atmospheric chemistry models to investigate both anthropogenic and natural perturbations to the atmosphere will provide an important stimulation and focus to the observational and laboratory activities at SAO. To conduct a program of study of atmospheric physics and chemistry related to global change, SAO requests funding to hire four physicists (4 workyears and \$332,000) and relevant equipment, supplies, and support for travel (\$218,000).

In assessing the potential impact of human-induced changes, accurate predictive models can make essential contributions to the formulation of public policy. These models require a detailed understanding of the chemistry and physics of the atmosphere.

Infrastructure Needs at Fred L. Whipple Observatory (\$145,000) - The Whipple Observatory in Arizona is SAO's primary installation for ground-based observational astronomy and the site of the Multiple Mirror Telescope. Already considered by scientists as one of the world's premier research facilities, the Whipple Observatory seems destined to become a major attraction for the general public when a new base camp and visitor center open at the base of Mt. Hopkins within the Coronado National Forest.

As a national facility, the Whipple Observatory annually hosts scores of scientists from around the world who require technical assistance and administrative support from the base camp while using the mountaintop instruments. The new visitor center is expected to attract an estimated 20,000 public visitors annually, including students, amateur astronomers, and users of the nearby trails and camping areas.

The Whipple Observatory has a significant infrastructure, similar in extent to that of a small town. In addition to the telescope buildings, this infrastructure includes 12 miles of mountain road, a telephone system, a power generation and distribution system, a water system, an emergency radio system, a microwave computer network, and a fleet of 60 vehicles. For many years the staff of the Whipple Observatory has maintained this facility by creative use of "shoestring and sealing wax," including acquisition of excess Government equipment. However, this juggling act is becoming increasingly difficult to maintain. For example, reduced military budgets and the auctioning of old military vehicles are making it harder to maintain the Observatory's fleet. Services and equipment needed in FY 1993 include cleaning, security, and maintenance services (\$80,000); a "cherry picker" (\$35,000); replacement vehicles (\$20,000); an instrument lift (\$5,000); and storage and display fixtures for the visitor center (\$5,000).

The Whipple Observatory, symbol of SAO's leadership in astronomy as well as of the Institution's presence in the southwestern United States, needs basic infrastructure support to adequately serve scientific users and public visitors.

Education (1 workyear and \$86,000) - Perhaps because of its close association with a major university, SAO has always had a deep commitment to education. Even before national concerns about the lack of "science literacy" among young Americans were widespread, SAO began developing a program (Project STAR) to use examples based on astronomy to improve the teaching of science and mathematics at the high school level. These innovative materials emphasize low-cost student activities based on "high-tech" demonstrations and devices, such as a hand-held spectrograph (costing less than a dollar), that allow students to understand the physics of light.

Technology, however innovative or inexpensive, will not find its way into the Nation's classrooms unless teachers understand how to make effective use of it. Since tens of thousands of teachers are involved with teaching science and mathematics in the Nation's schools, it is obviously impractical for any organization to attempt to reach more than a small fraction of these teachers directly. Instead, SAO proposes to conduct workshops for master teachers, who in turn will conduct workshops for teachers in their districts. These workshops will give teachers the experience of working with the innovative materials they will then use in their classrooms. Teacher training and continuing support are vital in light of recent studies showing that 20 percent of new teachers leave the profession during their first year and more than half leave before the sixth year. Furthermore, for each new mathematics and science teacher entering the profession, 13 are leaving.

SAO requests funds to hire an education specialist who will develop and conduct workshops training teachers to train other teachers in using modern educational materials to teach science in the Nation's schools (1 workyear and \$72,000) and support costs for supplies, equipment and travel (\$14,000).

SAO's educational program provides a model for how basic research centers can make direct and significant contributions to improving science literacy throughout the United States.

Human Resource Management (1 workyear and \$50,000) - SAO has an extremely high ratio of research to support staff: 80 percent of SAO's Federal personnel are scientific and technical, only 20 percent are management, administrative, and clerical. This situation exists despite the fact that SAO provides its own fiscal, contract, publication, personnel, and travel functions in Cambridge.

In FY 1993, the need for an additional personnel management specialist at SAO will become critical. Beginning then, SAO expects a series of retirements of senior scientific staff. The resulting search activities, training and transition periods, and possible internal restructuring will become a significant drain on the current human resources staff.

SAO requests funds to hire and provide support for a personnel management specialist to augment its human resources staff (1 workyear and \$50,000). This individual will participate in initiatives planned by SAO's Human Resources Department, including training and development programs, proactive affirmative action efforts in both recruiting and education, career development programs, position management and control, classification and compensation audits, and design and implementation of a strong employee relations program.

By having the benefit of the expertise of its own personnel management specialist, as well as improving the quality of its support services, SAO can make more rapid and effective responses to the host of scientific opportunities certain to follow the introduction of new astronomical instruments on the ground and in space.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Unrestricted General Funds come primarily from overhead charged on contracts and grants. These funds are used to support administrative positions and some other administrative costs of SAO. Special Purpose Funds come primarily from two sources: external users of SAO's Computer Center and the Institution's Trust Funds, with the latter providing by far the larger share. The former may be used for research and computer-related purchases in future years. Trust funds provide direct support for some research as well as for the Fellowship and Visiting Scientist programs, the largest uses of Special Purpose Funds.

Restricted Funds - Restricted funds consist of specific endowments as well as gifts from individuals, foundations, or corporations earmarked for particular research purposes.

Government Grants and Contracts - SAO receives the majority of its funds through Government agency contracts and grants for research in its particular areas of expertise and experience. This research is often carried out in cooperation with both governmental and academic institutions in the United States and abroad.

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	140	6,391	3	222	2	406	-	1,044	-	859
FY 1992 Estimate	143	7,053	3	229	2	329	-	267	-	365
FY 1993 Estimate	173	9,524	3	229	-	242	-	258	-	350

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Smithsonian Tropical Research Institute (STRI) is the Nation's premier center for basic research on the ecology, behavior, and evolution of tropical organisms. Headquartered in Panama, STRI staff conduct scientific investigations throughout the New and Old World tropics. STRI resident and visiting scientists perform research relating to global change in the areas of ecological systems and dynamics, earth system history, biogeochemical dynamics, and human interactions. The Institute publishes the results of its basic research, and appropriate results are applied to selected conservation and resource management problems. These applications seek alternatives to traditional agricultural and forestry practices that contribute to the massive deforestation of the world's tropical forests. STRI supports education and training in tropical biology through competitive fellowship and internship programs. With its environmental education programs, STRI also fosters conservation in the tropics. The terms of the Panama Canal Treaties of 1977 designate STRI as the custodian of the Barro Colorado Nature Monument, a 12,000-acre tropical nature preserve located in the Panama Canal. The preserve consists of Barro Colorado Island (BCI) and five adjacent mainland peninsulas. Other STRI facilities include a cloud forest station, a research vessel, marine laboratories on the Atlantic and Pacific oceans, a research library, and a modern laboratory and conference center with administrative offices in Panama City.

For FY 1993, STRI requests an increase of 26 workyears and \$2,151,000 for global change research (3 workyears and \$200,000); education and training programs (4 workyears and \$232,000); a minority program (1 workyear and \$136,000); marine program staffing, equipment and support (5 workyears and \$563,000); safety and human resources management (2 workyears and \$177,000); security and protection (9 workyears and \$700,000); and a development office (2 workyears and \$143,000).

The Institution also requests no-year funding in the Major Scientific Instrumentation line-item for the nonpersonnel support to initiate a canopy access system at STRI and at SERC. In addition, the FY 1993 request for STRI includes an increase of 4 workyears and \$320,000 for personnel and support costs associated with this canopy access system. Since

this increase is related to the Major Scientific Instrumentation request, the justification for these positions appears in the Major Scientific Instrumentation section of the budget.

PROGRAM - The Smithsonian Tropical Research Institute performs four major functions in fulfilling its mission in tropical biology:

- conducts fundamental research on the ecology, evolution, and behavior of plants and animals, including humankind, with emphasis on the relationships of tropical forest organisms to global climatic change;
- provides major facilities and logistical support for the international scientific community to study both terrestrial and marine tropical biology;
- supports environmental education and conservation and management of tropical ecosystems;
- protects and manages the Barro Colorado Nature Monument under a treaty-assigned responsibility.

A compelling need exists for improved understanding and conservation of tropical terrestrial and marine ecosystems. Conversion of tropical forest to scrub and grassland can affect regional and even global climatic patterns. It may have an adverse impact on the North American environment. Tropical deforestation and uncontrolled harvesting of marine resources cause extinction of species that are sources of medically and commercially important natural products. STRI's basic research provides the knowledge and understanding essential for the effective management and conservation of these resources.

Among STRI's primary assets are the trust placed in the Institute by the host country and a long history of collaboration with Panamanian scientists and students. The continuing cooperation of the Republic of Panama facilitated the work at STRI of resident scientific staff and more than 300 visiting researchers representing 38 nations during 1991. The present government of Panama has demonstrated its commitment to a democratic process and has taken concrete steps to ensure the preservation of its rich tropical environment.

The study of tropical environments is vital to understanding biological diversity and global change. This understanding requires a basic knowledge of the history of tropical communities, the organisms that live in the tropics, and interactions among them.

Behavioral Ecology - The study of behavior of individual species forms an essential link in understanding the origins of biological diversity. Exciting new ideas are being developed at STRI about how novelties arise, the importance of sensory exploitation in the evolution of courtship signals and female mate choice, the rapid evolution of animal genitalia, and the role of parental care in the evolution of casidine beetles and poison-dart frogs. Studies at STRI involve birds, crabs, frogs, insects, spiders, and squid and employ modern techniques for recording, analyzing, and synthesizing animal signals. These studies draw on molecular techniques to determine genetic relationships among the individuals and species being studied. Their results increase understanding of one of the major components in the evolution and maintenance of biodiversity in the tropics: how animals behave in their interactions with each other and with their environment.

Molecular Evolution - Molecular evolutionary research on tropical marine fish and invertebrates being carried out at STRI is providing novel insight into the processes of biological diversification and the effects that global processes have on marine populations. Thus the same genetic methodologies that are proving so useful to understanding of human disease are also increasing understanding of the biotic consequences of global catastrophes, such as environmental degradation and the loss of biological diversity.

Tropical Marine Ecology - Tropical marine communities are changing as a consequence of deforestation, increases in human exploitation, the discharge of agricultural and industrial wastes, and global climatic change. For example, STRI researchers are documenting coral bleaching associated with El Niño events, altered coral reef structure resulting from the die-off of the Caribbean black sea urchin, and gradual loss of coral colony cover in coastal fringing reefs for reasons yet unknown. In addition, a major study of the paleoecology of the Isthmus of Panama is producing for the first time a history of past changes in the marine environment against which current changes can be measured. The construction of a new research vessel with funds appropriated in FY 1990 and FY 1991 will allow expansion of these studies to the entire Caribbean and tropical eastern Pacific Ocean.

International Forest Dynamics Project - STRI has created the Center for Tropical Forest Science as headquarters for a worldwide network of long-term tropical forest censuses. STRI initiated this program with a permanent 120-acre plot in Panama that has now been censused three times over ten years. Similar plots have been started in Malaysia, Thailand, India, and Sri Lanka, and detailed data on growth, survival, and productivity are being collected for each. The ten-year recensus of the original plot in Panama was completed in FY 1991. Data were obtained, for example, on one of the prime commercial hardwood species in Panama (Prioria); this species shows unusually low adult mortality rates but rapid growth rates. The information gathered is being used to develop plans for: the sustained management of tropical forests, identifying fast-growing species for potential use in plantations, and testing hypotheses about patterns of biodiversity in the tropics. In addition, the forest censuses will provide a baseline of data for assessing the effects of global climate change on tropical forests. This project is partially funded by a \$1.1 million grant over five years from the MacArthur Foundation.

Paleoecology - The paleoecology program at STRI seeks to understand both the past changes of climate and vegetation in the tropical forest resulting from natural and human influences and the biologic and climatic consequences of the closing of the Panamanian Isthmus, which occurred about three million years ago. Researchers have found that, contrary to conventional wisdom, tropical forests have changed profoundly over the last 200,000 years: first in response to climatic oscillations associated with the Ice Age, and then following from ancient modification and clearing by Amerindians during the past 11,000 years. Surprisingly, extant forest over much of the Pacific watershed may be very young, having recovered from prehistoric clearing only after European arrival and the decline of indigenous peoples. This information will help researchers build viable models of sustainable resource use and reforestation. A grant from the Mellon Foundation has funded technical assistance and fellowships under the paleoecology program.

Canopy Access System - The tropical forest canopy is the most diverse and environmentally sensitive habitat on Earth, yet it is poorly known because access has been difficult. STRI has pioneered the use of modified construction tower cranes to provide safe, rapid access to large areas of forest canopy for long-term research. STRI installed

a small prototype crane in FY 1990, and this system continues to provide design and engineering data for the much larger, permanent access system planned for Barro Colorado Island. Ongoing research is showing for the first time how canopy trees respond to seasonal and shorter-term changes in light, humidity, temperature, and atmospheric carbon dioxide. These studies are revolutionizing understanding of tropical forest biology and will provide the basis for management and conservation of tropical forests in the face of accelerating deforestation and rapidly changing climate.

Fellowships, Conservation, and Environmental Education - One of STRI's major efforts centers on the development and support of young scientists. In FY 1991, 90 young men and women from 20 nations participated in STRI's academic programs, including students and professionals who took part in courses organized by STRI on conservation and natural resource management and field biology. In addition, STRI continues its programs to educate the lay public about tropical environments and cultures. In FY 1991, STRI prepared a bilingual (Kuna-Spanish) illustrated booklet on the natural history of native animals for Kuna children, the indigenous inhabitants of the San Blas Archipelago, where STRI maintains a field station.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, STRI requests an increase of 26 workyears and \$2,151,000 for global change research (3 workyears and \$200,000); education and training programs (4 workyears and \$232,000); a minority program (1 workyear and \$136,000); marine program staffing, equipment, and support (5 workyears and \$563,000); safety and human resources management (2 workyears and \$177,000); security and protection (9 workyears and \$700,000); and a development office (2 workyears and \$143,000).

The Institution also requests no-year funding in the Major Scientific Instrumentation line-item for the nonpersonnel support to initiate a canopy access system at STRI and at SERC. In addition, the FY 1993 request for STRI includes an increase of 4 workyears and \$320,000 for personnel and support costs associated with this canopy access system. Since this increase is related to the Major Scientific Instrumentation request, the justification for these positions appears in the Major Scientific Instrumentation section of the budget.

Global Change Research (3 workyears and \$200,000) - The study of tropical habitats is vital to understanding global change. These habitats contain most of the world's species of animals and plants, many of which have important, though mostly untapped, potential as sources of medicine and food. Tropical forests play a major role in regional and probably in global climate systems, and coral reefs protect large areas of coastline from erosion. The destruction of tropical forests proceeds at an unprecedented rate. This destruction will have global consequences through effects on atmospheric water cycles, production of greenhouse gases, and siltation of coastal marine habitats.

This requested increase for research related to global change for FY 1993 will support the personnel necessary for the international forest dynamics project and the tropical paleoecology program.

-- International Forest Dynamics Project - The geographical breadth, international cooperation, and use of standardized research techniques make STRI's Center for Tropical Forest Science (CTFS) a unique resource for tropical forest ecologists and managers. CTFS in Panama serves as a data repository, training, and computer analysis center for many cooperating sites throughout the tropics.

To support this role, STRI requests a data base manager and a field coordinator (2 workyears and \$71,000) and supplies and equipment (\$29,000) for CTFS.

-- Paleocology Program - STRI's paleocology program seeks to understand the record of past global change using ocean and terrestrial sediments as well as the prehistoric record of human influences on tropical forests. Through recovery and identification of microscopic fossils from plants and animals, this research provides a picture of changes in climate and vegetation during the last 200,000 years. Such data are crucial for modeling ecosystem response to future anthropogenic and climate change and creating informed environmental policy. They are essential for building realistic models of sustainable forest management and reforestation.

The paleoecological program at STRI, though in its formative stages, has had considerable success in locating sites of great age and addressing questions of long-standing importance to the past history and future of tropical ecosystems. A fundamental need of the program is technical support for existing staff scientists.

With the requested funds, STRI will hire a research assistant (1 workyear and \$35,000) to carry out the technical analysis of samples retrieved in the field and provide the basic data for scientists to evaluate and prepare publications. Additional funds of \$50,000 will purchase supplies and equipment, and \$15,000 will be used for travel in support of this program. This request will partially replace a grant from the Mellon Foundation, which funded the paleocology program in its formative stages.

Given the urgency of the issues and the crucial role of the tropics and the Isthmus of Panama, STRI intends to implement its plan to expand its research program in the area of global change. The expansion is targeted to key areas in which more expertise is needed. STRI's permanent base in the tropics, location in Panama, stewardship over protected research areas, and multi-faceted approach to tropical research for more than 60 years make it uniquely suited for such a venture.

Education and Training Programs (4 workyears and \$232,000) - To understand and conserve tropical biodiversity, intensified efforts in education at every level will be required. STRI seeks to expand its educational mission to include programs for primary and secondary school students and to establish a training program for professionals in tropical biology and conservation.

With the return of democracy to Panama, a site adjacent to STRI's marine facilities formerly occupied by the military government has become available to STRI and the University of Panama for the development of a marine educational program. The objective of this program is to increase the public's awareness about marine resources and environments. The program will include an exhibit with aquaria and touch pools featuring marine organisms from both the Atlantic and Pacific oceans. STRI will develop the exhibit with private funds.

Funds requested for FY 1993 will support a marine science coordinator/educator (1 workyear and \$29,000) and \$30,000 for supplies, materials, and equipment to establish special programs for students and teachers in collaboration with Panama's Ministry of Education. This program will also serve students from the U.S. Department of Defense Schools.

A secondary component of the education program request for FY 1993 will introduce high school students to the concepts of biodiversity and complexity of tropical ecosystems in order to encourage an increased appreciation for tropical environments. The proposed programs will transmit information derived from research at STRI and help motivate students to choose careers in tropical biology and related fields.

An education specialist and a docent (2 workyears and \$80,000) and \$43,000 for printing, supplies, and equipment will support these programs and train, if necessary, additional volunteers. STRI will develop these programs in consultation with the Smithsonian's Office of Elementary and Secondary Education.

Environmental problems in tropical nations need to be solved by trained professionals in these countries. With the goal of creating a cadre of trained professionals in tropical biology and conservation and wildlife management, STRI has initiated efforts to strengthen its training component. In FY 1991, STRI offered an international course on conservation and management of wildlands to 25 participants from eight nations. It was extremely successful, and STRI proposes to offer the course on a yearly basis.

To give the training program the necessary continuity, STRI requests a full-time training coordinator (1 workyear and \$50,000) for FY 1993. This training coordinator will be charged with developing the conservation and management courses as well as organizing field courses for university biology students and naturalist guides.

Through expanded educational programs, STRI will transmit its expertise in tropical biology and conservation to students and professionals in tropical areas, where such programs are sorely lacking.

Minority Program (1 workyear and \$136,000) - One of the Smithsonian's established objectives is to broaden the ethnic, racial, and cultural composition of its scientific community. Almost 33 percent of STRI's scientific staff initiated their Smithsonian careers through the Smithsonian fellowship program. To attract fellows and interns from underrepresented racial and ethnic backgrounds, STRI proposes to establish a minority program in FY 1993.

The proposed minority program will consist of competitive fellowships and internships specifically targeted to the underrepresented groups. STRI will seek to recruit promising students or young scientists from minority racial and ethnic backgrounds from the United States, Asia, Africa, and Latin America and offer them training (internships) and research opportunities (fellowships) at the pre- and post-doctoral levels in areas of STRI expertise. The program will be set up with cooperation and advice from the Smithsonian's Office of Fellowships and Grants and Office of Equal Opportunity.

A program such as the one proposed will require hiring a program assistant to work with the education officer on the various aspects of this program, including recruiting and advertising, application processing, selection of fellows and interns, assistance to selected persons, and follow-up of program participants. STRI requests funds for a program assistant (1 workyear and \$21,000); minority fellowships and internships (\$75,000); travel (\$10,000); and supplies and equipment for the program, including a field vehicle for program participants (\$30,000).

In future years STRI plans to expand this program to include hiring a minority staff scientist selected from the pool of successful fellows. This scientist will serve as a

role model for minority students and as a program consultant. Future funds will also permit selected minority fellows and interns to attend professional meetings and specialized training courses, such as the tropical biology field courses offered by the Organization for Tropical Studies in Costa Rica. These experiences are necessary to complement academic training of the fellows and interns.

Marine Program Staffing, Equipment, and Support (5 workyears and \$563,000) - Marine research at STRI is directed at documenting past and current changes in marine communities in the Caribbean and tropical Eastern Pacific oceans. STRI's goal is to understand the ecological and evolutionary processes that have molded marine species distributions and abundances so that the nature and severity of current changes can be accurately assessed and managed.

The FY 1993 request in this area will support staffing, equipment, and the operation of STRI's new research vessel and will provide the administrative support essential to accommodate past and continued vigorous growth of STRI's research program. The new vessel is being constructed with funds provided in FY 1990 and FY 1991 and will be ready for service early in FY 1993. With the vessel, STRI will have, for the first time, truly regional research capability in both the Caribbean and tropical Eastern Pacific oceans. Researchers will be able to dredge, core, and do other bottom work from the new vessel. These sampling methods are the foundation of marine paleoecological research. Ship-board molecular screening of genetic diversity conducted in the vessel's modern laboratories will maximize the efficiency of STRI's collecting programs.

With the requested funds STRI will staff the vessel with a marine engineer, a first mate, and an oiler/deck hand (3 workyears and \$137,000) critical for its successful operation in service of research. Additional funds are required for vessel equipment (\$250,000) and for support of the vessel's operation (\$124,000).

Equally essential are funds to support a secretary and a scientific coordinator at the Naos Laboratories of STRI (2 workyears and \$52,000). STRI has added five staff scientists and the entire STRI molecular evolution program to the Naos Laboratories since the last increase in support, a single secretary, in 1984. Growth in STRI's scientific diving, marine education, fellowship, safety, and contract research programs has also been substantial. The two new positions will ensure timely and efficient administrative service to all research staff, visitors, and students at the Naos Laboratories.

This request in support of the marine program reflects STRI's need for support of research capabilities that will allow it to continue to advance understanding of past and current ecological and evolutionary processes that affect marine communities of the Neotropics. STRI is in the unique position of being able to provide information of broad geographical scope that will be essential for developing rational plans for the management of the marine resources and environments of the region. The requested funds will contribute fundamentally to its achievement of these objectives.

Safety and Human Resources Management (2 workyears and \$177,000) - The expansion of STRI's work force and increasing complexity of its research programs necessitate the establishment of a comprehensive safety program to protect the welfare of employees and the interests of the Smithsonian Institution and the U.S. Government. Safety programs designed to prevent accidents are necessary and cost effective. Program and staff increases have also placed additional demands on the personnel specialist at STRI. By upgrading the personnel services, STRI can ensure the effective application of the complex

laws and regulations governing employment in Panama and improve human resources development.

STRI requests a safety officer (1 workyear and \$42,000) to establish and administer programs for fire protection, safe storage and disposal of chemicals and hazardous waste, and employee safety training. Modern laboratory techniques often employ hazardous chemicals, including radioactive materials, that require special handling. Since there are no hazardous waste disposal facilities in the Republic of Panama, STRI must ship its hazardous waste to the United States and dispose of it according to applicable state and Environmental Protection Agency regulations. STRI requests \$100,000 for FY 1993 to initiate a program of disposing of hazardous waste. The program's safety officer will manage this effort by identifying container contents; initiating prudent disposal measures; keeping a current inventory of hazardous waste at each facility; and maintaining proper collection, identification, storage, and disposal records for all hazardous waste accumulated at each facility at STRI. No one presently on the STRI staff has the necessary expertise on Occupational Safety and Health Administration (OSHA) and other safety regulations to establish an effective preventive safety program.

The average ratio of personnel services people to total employees for the Federal service is approximately 65 to 1, while STRI has 191 employees dependent upon one personnel specialist. STRI requests 1 workyear and \$35,000 to hire a second personnel specialist who will share the responsibility for position management and classification, attend to labor relations matters, administer benefits and Equal Employment Opportunity programs and provide employee counseling and training.

The establishment of a comprehensive safety program and enhancement of personnel services together will dramatically improve the support of STRI's research programs. By preventing accidents and ensuring the effective management of the work force, STRI can more efficiently apply its time and effort toward fulfilling its research and conservation mission in tropical biology.

Security and Protection (9 workyears and \$700,000) - STRI is responsible for the safety of a staff of 28 scientists, support personnel, and hundreds of visiting researchers; it is also responsible for the security and protection of the 12,000-acre Barro Colorado Nature Monument in accordance with the terms of the Panama Canal Treaties and the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere. Political and economic events in the Republic of Panama during the past three years have greatly increased STRI's security requirements. During the U.S. military action in 1989, the Panamanian Defense Forces were destroyed. Urban crime has become a very serious problem in the country, and poaching activity has increased markedly in and around the Barro Colorado Nature Monument as a result of economic deterioration.

In April 1991, STRI completed an evaluation of its current security/protection requirements. This evaluation identified three major areas of STRI's present security/protection operation which must be improved. This requested increase substantially funds the major recommendation of this report.

Security at STRI installations in Panama City and Galeta is provided by contract guard services. However, at present no security service is provided for the STRI visitors' dormitories in Ancon, Diablo Heights, and Gamboa. No additional security was contracted after the opening of the 70,000 square foot Tupper Research and Conference Center at the Tivoli site. Culebra Island, adjacent to the Naos Marine Laboratory, reverted to STRI

control after the U.S. military action and also has to be protected. Other facilities, including a dock and supply staging area in Gamboa, will be established soon. Contracted security services need to be expanded to cover the increased requirements at the Tupper/Tivoli, Ancon, and Naos sites and to extend coverage to Diablo Heights and Gamboa. STRI requests \$256,000 to cover these additional security contract services in FY 1993.

The security operation at STRI will be managed by a security officer responsible for eight major facilities scattered over 50 miles. The responsibilities and administrative requirements of this position are great due to the opening of new STRI facilities, the expansion of STRI activities, and the difficult socio-economic environment prevailing in Panama. A position of deputy security officer to assist the security officer will enhance the effectiveness of the operation by providing increased capabilities for staff supervision, remote site investigations, controls, administration, liaison, and other security functions. Availability of a secretary will improve the efficiency of the security office by relieving the security officer of routine administrative and clerical functions such as preparing security reports, staff requests for additional security, and other matters.

STRI requests funds to establish a Federal funding base to hire a security officer, a deputy security officer, a secretary (3 workyears and \$109,000) and to purchase a vehicle for routine and emergency needs of the security office (\$35,000).

Additional measures need to be taken if STRI is to adequately protect the fauna in the Barro Colorado Nature Monument as well as ensure the safety of the game wardens and scientists who work in the area. These measures include the hiring of six additional game-wardens (6 workyears and \$126,000) and their training, the outfitting of the entire game-warden force, the acquisition of additional field equipment, a field vehicle, support for the Forestry Police, and additional operational funds for the Protection Office (\$94,000).

To assure staff safety, the communications system requires upgrading through the installation of a new repeater and acquisition of an additional frequency, additional portable radios, and a new phone patch. To cover these requirements STRI requests \$65,000 for radio communications and \$15,000 to replace and establish a funding base to purchase specialized equipment for the game-wardens in FY 1993.

With the requested increase in contract security services, staffing for the security operation, and acquisition of specialized equipment, the protection of STRI staff, visitors, and facilities and the control of poaching in the Barro Colorado Nature Monument will be more effective. It is vital that the buildings and field facilities be safeguarded to ensure their continued availability to the world's tropical research community as well as the preservation of the natural areas under STRI's custodianship.

Development Office (2 workyears and \$143,000) - Rapidly accelerating deforestation, desertification, and pollution are placing increasing demands on STRI's research and training programs in tropical biology at a time of increasing budgetary limitations. Private fundraising could support a portion of STRI's future program expansion, especially in areas in which increased public awareness of issues such as global climatic change have influenced the emphases of foundations and corporations.

STRI seeks funding for a development officer and an administrative assistant (2 workyears and \$82,000); travel support to develop and submit proposals (\$30,000); other services (15,000); and supplies and equipment (\$16,000). The Development Officer will

consult with STRI scientific staff and administrators to establish priorities for fundraising, will prepare preproposals and full proposals, and will submit these to appropriate funding agencies and individuals. The support position will provide necessary clerical and administrative assistance.

STRI must make the most of its unique location in the tropics to answer critical environmental questions. By finding alternative sources of funding, a development office will help to achieve these goals in a cost-effective way.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds derive from a variety of sources, including receipts and collections from users of Barro Colorado Nature Monument facilities (20 U.S.C. 79b (d)) and annual allotments. Such funds support, in part, the salaries and related costs of the fellowship program, the senior sabbatical program, insurance, supplies, and a long-term collaborative research program with the Forest Research Institute in Malaysia. Funds also support a short-term fellowship program in tropical biology; visiting scientists and students; field research; seminars and lectures; and environmental, conservation, and educational activities in Panama. Funds are also available from the Institution's Scholarly Studies and Research Opportunities fund to support research at STRI.

Restricted Funds - These funds are in the form of restricted endowments that specify the use of the donation or bequest and gifts and grants from individuals, foundations, organizations, or corporations for specific purposes. These funds advance scientific research related to the biological, ecological, and behavioral processes that serve as a basis of tropical ecosystems; research related to geophysical events; publication and distribution of research results; and studies related to endangered tropical environments.

Continuing support from the Exxon Corporation provides short-term tropical biology fellowships and assistance to 25-30 students per year from developing Latin American countries. In FY 1991, STRI received \$1.1 million from the MacArthur Foundation to support the Center for Tropical Forest Science over a five-year period. That same year STRI received a grant of \$90,300 from the Hasselblad Foundation to support the Scanning Electron Microscope Laboratory, and through the United Nations Environmental Program \$90,000 and \$75,000 from the Finnish and German governments, respectively, to support the modification of a tower crane to study the upper canopy of the forest.

Government Grants and Contracts - In FY 1987, the Minerals Management Service of the Department of the Interior awarded STRI a contract of more than \$4 million to fund a five-year study of the catastrophic oil spill at the Galeta field station. This study is scheduled to terminate in March 1992.

SMITHSONIAN ENVIRONMENTAL RESEARCH CENTER

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	41	2,143	2	100	-	90	-	20	-	545
FY 1992 Estimate	45	2,979	2	100	-	90	-	20	-	290
FY 1993 Estimate	59	3,579	2	100	-	90	-	20	-	290

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Smithsonian Environmental Research Center (SERC), in Edgewater, Maryland, performs basic scientific research on coastal air/land/water systems. SERC currently occupies 42,000 square feet of laboratory office, educational, and support space and 2,600 acres of land on the Rhode River, a tidal river system. The interdisciplinary staff, visiting scientists, and students study how land use, air quality, and weather variations affect the movement of nutrients, eroded soil, and other materials through the system; the dynamics of plant and animal populations; and the overall health of the system. SERC also conducts public education and outreach activities for audiences of varied ages and diverse cultures. The research staff uses long-term observations, controlled experiments, and models to address a wide variety of ecological questions, particularly those relevant to the Chesapeake Bay region. SERC is one part of a network of United States and international sites, each of which is conducting ecological research relevant to its geographic region.

For FY 1993, SERC requests an increase of 9 workyears and \$287,000 to improve infrastructural support. The Institution also requests no-year funding in the Major Scientific Instrumentation line-item for the nonpersonnel support to initiate a canopy access system at SERC and at STRI. In addition, the FY 1993 request for SERC includes an increase of 5 workyears and \$313,000 for personnel and support costs associated with this canopy access system. Since this increase is related to the Major Scientific Instrumentation request, the justification for these positions appears in the Major Scientific Instrumentation section of the budget.

PROGRAM - SERC research aims to understand how coastal air/land/water environmental systems function. The research staff addresses a wide variety of ecological questions while conducting a long-term interdisciplinary study of a tidal subestuary of the Chesapeake Bay (Rhode River) and its watershed. This watershed contains a mosaic of upland and floodplain forests, marshlands, croplands, pastures, abandoned fields, and residential areas typical of the mid-Atlantic Coastal Plain. Comparative studies are conducted throughout the Chesapeake Bay region to put results from the Rhode River site in a regional perspective. The Center has studied the effects of herbicides on plants in the Chesapeake

Bay, the effects of acid rain on deciduous forest and bay fish reproduction, the role of riparian forests in alleviating agricultural pollution, the effects of increasing concentrations of atmospheric carbon dioxide on natural communities, and the impact of forest fragmentation on woodland bird populations.

Research - For four complete years SERC scientists have continuously maintained tidal marsh plant communities in an atmosphere of elevated carbon dioxide concentrations similar to global concentrations predicted for the 21st century. All plant species exhibited increased productivity and water use efficiency, but the effects were greatest for "C3" species such as the sedge Scirpus olneyi. It has been widely predicted that plants will quickly acclimate or adjust to increased carbon dioxide and that the effects of elevated carbon dioxide concentrations will decrease or disappear. This was not the case. In fact, after four years the productivity of Scirpus increased further and the quantum efficiency of photosynthesis--the amount of carbon dioxide fixed per quantum of sunlight absorbed--was the same as in controls. Thus these plants should respond to increased carbon dioxide concentrations by removing and storing more carbon, thereby reducing the rate of increase in atmospheric carbon dioxide below present predictions. A three-month carbon dioxide enrichment study of nine tropical plant species found that the five "C3" species and a crassulacean species exhibited increased productivity and water use efficiency. In contrast, no significant effects were found on the productivity of the other species such as the grass Paspallum conjugatum. Scientists reviewed the results of the only six studies ever conducted of the responses of plant communities grown for extended times in elevated carbon dioxide. These studies all recorded increased productivity, but the effects of elevated carbon dioxide were lowest in cold climates such as the tundra and greatest in tropical climates such as rice farms. Intermediate effects were found in temperate climates such as the Chesapeake Bay region.

Studies of the reproductive biology of the swamp rose mallow Hibiscus moscheutos, which grows in the tidal wetlands of the Rhode River system, found that pollination was not a limiting factor in seed production. Instead, salt stress and insect damage to developing seeds were the primary factors. Fruit set was 53 percent in a normal rainfall year, but only 2 percent in a severe drought year. Another tidal wetland study examined the role of litter in nutrient cycling within narrow-leaved cattail, Typha angustifolia, communities. In replicated plots, litter was removed, replaced with a pseudolitter of plastic strips, increased threefold with litter from other sites, or left unaltered. Some plots were also fertilized with nitrogen and phosphorus. Fertilization increased aboveground productivity but decreased flowering. Fertilized plant tissues were enriched in nitrogen and phosphorus, which resulted in increased rates of infestation by boring noctuid moth larvae. The effects of the litter manipulations seemed to be mostly due to the physical structure of the litter layer rather than to the processes of decomposition. Plots with no litter or pseudolitter developed higher concentrations of ammonium in the sediments. Fertilized plots with no litter had greater increases of phosphate in the sediment.

Sunlight penetration is often a limiting factor for algal productivity in the turbid waters of the Rhode River and the Chesapeake Bay. Data gathered with an underwater spectral radiometer were used to develop a mathematical model for the attenuation of light with depth under various water quality conditions. The spectral radiometer measures precisely the light intensity of 13 different colors of visible light and one infrared region. Light scattering was found to be linearly related to the concentration of total mineral suspended particles for all colors of light. For each light color, the proportions of light absorption due to water itself, to dissolved organic matter, to phytoplankton

pigments, and to detritus were determined under a wide variety of field conditions. The final model allowed accurate predictions of light intensity and color composition at various depths based on commonly measured water quality parameters.

Microscopic zooplankton that rely on cilia for propulsion is abundant in Chesapeake Bay. These ciliates are important in the food chain, as they eat bacteria and algae. Intensive studies of ciliate population dynamics in the Chesapeake Bay near the Rhode River found that their numbers peak in April and are at a minimum in September. In the spring, 70 percent of these organisms were in bottom waters, while in the summer, 85 percent were in surface waters. Ciliate numbers were not correlated with chlorophyll concentrations but were related to concentrations of microflagellates. Low dissolved oxygen concentrations in the bottom waters in summertime probably result in high ciliate mortality. Most ciliates are restricted to waters containing at least two parts per thousand of dissolved oxygen. Major mortality of these ciliates interrupts the Bay's food chain lowering the production of commercial fisheries.

Educational Activities - SERC provides a broad range of educational activities, including teacher-led field trips, self-guided nature trails, and guided tours. Groups of students and the general public observe firsthand a variety of natural habitats. A work/learn intern program enables students from all over the world to work with scientists and educational staff, both in the field and in the laboratory. Predoctoral, postdoctoral, and sabbatical programs for professionals make it possible for visiting scientists to carry out collaborative or independent research. SERC disseminates the results of its research through scientific journals, national and international meetings and seminars, the training of scientists, and public education activities. A new outdoor activity, the Java History Trail, is nearing completion. It consists of a network of trails, boardwalks, and exhibits along the Rhode River shoreline. The exhibits feature Native American and colonial history along with current human interactions with this environment.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, SERC requests an increase of 9 workyears and \$287,000 to improve infrastructural support. The Institution also requests no-year funding in the Major Scientific Instrumentation line-item for the nonpersonnel support to initiate a canopy access system at SERC and at STRI. In addition, the FY 1993 request for SERC includes an increase of 5 workyears and \$313,000 for personnel and support costs associated with this canopy access system. Since this increase is related to the Major Scientific Instrumentation request, the justification for these positions appears in the Major Scientific Instrumentation section of the budget.

Infrastructural Improvements (9 workyears and \$287,000) - SERC facilities and staff have been growing in response to public demand for education and research on important environmental issues. Especially as SERC is the only long-term ecological research site in the Chesapeake Bay region with the potential to meet U.S. Global Change Research Program needs, its facilities and staff must expand further in the next several years. Growth in programs has already outpaced SERC's administrative, facilities, and security services, and the Smithsonian's central Office of Plant Services, located 35 miles from SERC, can no longer efficiently provide facilities maintenance because of the frequency and time of travel involved.

SERC has approximately 30,000 square feet of buildings requiring custodial maintenance. Many of the buildings are old and require frequent plumbing repairs. A fleet of 15 jeeps, cars, and trucks as well as such utility machinery as lawn mowers, tractors, a forklift, and a backhoe have to be maintained. SERC also has a fleet of about

20 small boats and outboard engines and a 40-foot research boat. In addition, SERC's 2,600 acres must be maintained, as well as its many miles of roads. Currently, SERC has only one facilities maintenance custodian. The request of 6 workyears and \$184,000 for facilities maintenance deficiencies includes one plumber, one mechanic, two grounds keepers, one custodian, and 1 maintenance leader. This level of facilities maintenance support will allow SERC to meet its routine maintenance needs without the long delays and high overall costs of the present system.

The SERC administrative staff is also overextended due to the increase in programs. SERC has only four office staff to operate the switchboard; maintain the reception desk for the public; process purchases, travel orders, and personnel actions; and carry out necessary typing and filing. SERC requests 1 workyear and \$29,000 for an administrative technician to meet administrative needs.

SERC has to provide security for its 2,600 acres, including 15 miles of Chesapeake Bay shoreline and about ten miles of land boundaries as well as widely separated buildings, field equipment, and public areas. SERC has only two security personnel to carry out routine patrols of these extensive facilities and to respond to calls for assistance from staff, visitors, and neighboring property owners. SERC requests 1 workyear and \$23,000 for a security guard to improve its security.

Finally, as the public's interest in environmental matters increases, especially in the Chesapeake Bay region, SERC anticipates the need for expanded visitor facilities and public programs. There is also a need to further protect the Rhode River site for future educational and research programs. Such visitor education facility improvements and land protection efforts will require extensive fund raising from private sources. SERC has never had a development officer. SERC seeks 1 workyear and \$51,000 for one development officer to raise funds efficiently and effectively to support its increasing activities.

The Institution has the responsibility of caring for the National Collections and must protect its environmental assets and natural resources as well. Protection and care of SERC's facilities, staff, public, and natural resources, which form the basis for research on the Chesapeake Bay region, are vital.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds, provided by allotments, support special events, work/learn and fellowship programs, and the salary costs of a docent coordinator and a public program director.

Government Grants and Contracts - Various Federal and State agencies supply funds for special projects conducted at SERC that use the expertise of the staff and the unique physical site characteristics. Four grants from the Chesapeake Research Consortium support research on ecosystem dynamics and community ecology; a grant from the U.S. Department of Energy advances the study of effects of greenhouse gases on tidal marshes; a grant from the National Oceanic and Atmospheric Administration supports work on the relationship between sunlight attenuation in Chesapeake Bay and plant community dynamics; and a grant from the Maryland Department of the Environment supports studies of the role of riparian vegetation in nutrient dynamics.

NATIONAL ZOOLOGICAL PARK

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	361	15,812	1	144	4	802	1	583	-	484
FY 1992 Estimate	361	16,825	1	156	-	1,075	-	693	-	400
FY 1993 Estimate	388	19,113	1	156	-	873	-	740	-	450

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - When the National Zoological Park (NZP) was founded in 1889, its mission was defined as "the advancement of science and the instruction and recreation of the people." This mission can now be expressed as the advancement of science and the education and recreation of the people. The National Zoo has certain features in common with other Smithsonian public facilities and some features that are totally unique within the Smithsonian family. Its exhibits are alive, and new exhibits require new construction, not merely remodeling. Since NZP's public function is educational and recreational, it seeks to enhance public awareness about biology and related subjects. This emphasis means that the Zoo is concerned with all aspects of animal life, both terrestrial and aquatic, small and large, past and present. Humankind has been part of the living world, and an increasing influence on it, ever since our species first appeared. Our own biological history is therefore part of the Zoo's subject matter. Responding to the world environmental crisis, the Zoo is now committed to representing the whole of life on earth, plant and animal, in all its complexity and glory. To this end, NZP will transform the animals-only zoological park into a biological park. In the BioPark, the intermeshing relationships of animals and plants will be highlighted. The BioPark will educate visitors by its spectacle and beauty and foster a concern for the future of life in all its forms. This holistic approach will combine living exhibits of plants and animals with museum-type exhibits of structures, such as skeletons and fossils. It will make fruitful cross-correlations with other Smithsonian entities involved in research, art, and science exhibits.

For FY 1993, the Zoo requests an increase of 27 workyears and \$2,288,000 for the Endocrine Research Laboratory (3 workyears and \$251,000); scientific equipment replacement (\$425,000); infrastructure requirements to address audit deficiencies (2 workyears and \$199,000); infrastructure support for current programs (12 workyears and \$613,000); support of public programs - cultural pluralism (2 workyears and \$100,000); expansion of the Global Change Program (5 workyears and \$500,000); and international environmental education programs (3 workyears and \$200,000).

PROGRAM - By historic mandate, the primary mission of the National Zoological Park is the advancement of science, conservation of biodiversity, education, and recreation. NZP serves both the general public and more specialized audiences by promoting the conservation of life on Earth through informal and formal education, research, and animal health programs. NZP's educational efforts center on biological literacy, with special emphases on evolution, complex adaptive interactions, the origins and importance of biodiversity, global change, and the impact of humans on the rest of the world. The Zoo has moved beyond being a zoological park concerned only with animals to becoming a biological park with a scope extending to the whole living world, emphasizing interactions and holism. By cross-referencing other parts of the Institution, NZP focuses on biology in the fields of behavior, physiology, ecology, molecular genetics, conservation (applied and theoretical), veterinary medicine, and wildlife biology. Interdisciplinary cooperation is encouraged in all these areas of research.

In pursuit of its mission, NZP exhibits a wide range of living plants and animals on its 163-acre facility in Rock Creek Park in Washington, D.C., and maintains the Conservation and Research Center on 3,150 acres in Front Royal, Virginia, as a major animal breeding, conservation, training, and research center.

Living Exhibits - The BioPark breaks down traditional divisions in biological exhibition between plants and animals, aquatic and terrestrial life, vertebrates and invertebrates, past, present, and future, and even science and art. Exhibit remodeling, renovation, and construction promote a new emphasis on education about the living world. NZP goes beyond habitat exhibits that recreate natural environments to make the wonders of biology, such as intricate and beautiful adaptations for survival, accessible to all visitors. In FY 1991, the Zoo installed an interpretive exhibit titled "Giants" in the newly renovated Elephant House. The exhibit stimulates the visitor to explore the advantages and disadvantages of being huge and compares living large mammals to their extinct relatives and even to dinosaurs. Graphics in the Panda House were totally revised in light of recent scientific discoveries. The Komodo dragon enclosure was enlarged to encourage breeding. A coral reef tank opened in 1991 as the first exhibit in the new Australian Pavilion.

At its Rock Creek site, the Zoo cares for more than 6,200 animals, comprising about 500 species, and approximately 1,400 plant species. At the Conservation and Research Center, the Zoo maintains more than 800 animals representing 52 species whose status in the wild is precarious. In FY 1991, more than 1,000 births and hatchings occurred at the Zoo. Among these were a gorilla (the first in 17 years at the Zoo), red wolves, black-footed ferrets, small-clawed otters, servals, bongo, condor, Bali mynahs, Micronesian kingfishers, and green tree pythons. Significant additions to the Zoo's collection during FY 1991 included Palestinian mole rats and pygmy owls.

Public Education and Information - The Zoo has placed an increased emphasis on education. During "Super Week" in July 1990, fine-arts students, largely from Duke Ellington High School in Washington, D.C., brought lively hands-on demonstrations ("Will the Real Elephant Please Stand Up") and participatory activities ("How Animals Walk") to Zoo visitors. Zookeepers joined in by bringing out a few animals that could be handled such as a rat, a snake, and an armadillo. "Super Week" was an attempt to complement standing exhibits by actively engaging visitors, inviting them to explore biology. The Zoo believes that each component of its mission will benefit from improved education.

The birth of a gorilla at NZP, the Giant Panda Workshop, and the Golden Lion Tamarin Conservation Program generated news and feature stories that continue to focus public attention on issues important to biology, wildlife, and conservation.

Research - The Zoo's Research Department organized an international workshop on giant panda and red panda conservation in June. One hundred experts surveyed the status of wild and zoo populations of both species. While threats to continued survival are severe, the workshop produced global action plans to guide conservation efforts. The state-of-the-art Molecular Genetics Laboratory became operational, working initially on the evolutionary relatedness of endangered Hawaiian birds, in part by recovering "fossil RNA" from museum specimens.

Animal Management - Medical care and research programs are vital to the mission of the Zoo. New biotechniques allowed artificial insemination of the endangered Eld's deer and black-footed ferrets. The Zoo's reproductive physiology staff did evaluations of 120 cheetahs in 15 zoos; the results support a national breeding effort. NZP pathologists and veterinarians identified a virus in two golden lion tamarins scheduled to be reintroduced to Brazil. While the virus was not dangerous to the tamarins themselves, it could have triggered a disastrous epidemic in any predators or scavengers that might eat a reintroduced tamarin. The two tamarins will stay safely in the Zoo.

Animal Conservation - Current research projects at the Conservation and Research Center include reproductive studies on black-footed ferrets, Eld's deer, Guam rails, and other endangered species. The breeding of black-footed ferrets and Guam rails has been extremely encouraging, and Center staff is now participating in reintroduction efforts for both these species. In recent years, research on the Center's native flora and fauna has increased substantially, focusing on the conservation of migratory birds and the effects of herbivores on the overall plant and animal forest community. In cooperation with the National Park Service, study plots have been established on numerous locales on the Center and within the adjacent Shenandoah National Park.

The Zoo staff continues to play a leading role in international conservation through the wildlife and zoo animal management training programs for developing countries. These courses have provided training to more than 450 students and professionals from 36 countries. The Center has developed and continues to maintain CONSLINK, an international computerized conservation bulletin board, and Center staff have organized a number of workshops on microcomputer data management and analysis in India and Malaysia.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, the Zoo requests an increase of 27 workyears and \$2,288,000 for the Endocrine Research Laboratory (3 workyears and \$251,000); scientific equipment replacement (\$425,000); infrastructure requirements to address audit deficiencies (2 workyears and \$199,000); infrastructure support for current programs (12 workyears and \$613,000); support of public programs - cultural pluralism (2 workyears and \$100,000); expansion of the Global Change Program (5 workyears and \$500,000); and international environmental education programs (3 workyears and \$200,000).

Endocrine Research Laboratory (3 workyears and \$251,000) - One of the fundamental problems of species conservation is to understand why some species survive and others become extinct when faced with major environmental challenges such as habitat loss, alteration, and fragmentation. New tools in theoretical, molecular, cellular, organismal, and population biology, combined with field studies of target species, offer considerable promise of revealing the mechanism controlling species extinction and survival. Applying

these techniques in both field and captive studies will enable NZZ to better understand the relationship among population size, genetics, behavior, reproduction, stress, and disease.

For FY 1993, funding will allow the Zoo to hire an applied reproductive biologist and two laboratory technicians (3 workyears and \$136,000) to begin staffing the Endocrine Research Laboratory. NZZ will use the remaining funds (\$115,000) to purchase equipment and needed supplies for the Laboratory and to provide for travel and transportation costs related to field research.

In the Endocrine Research Laboratory, Zoo staff will study the reproduction of exotic animals, specifically the influences of nutrition, season, and disease and the processes and problems of gamete formation, ovulation, gestation, and parturition. The objectives are to understand as well as control reproductive processes, for example, by the hormonal induction of ovulation or parturition, artificial insemination, in vitro fertilization, and fertility control. This research will greatly enhance the prospects for survival of endangered animals in the wild and in zoos. Successful work is already under way with black-footed ferrets, Florida panthers, and cheetahs.

Scientific Equipment Replacement (\$425,000) - The National Zoological Park is a leading national and international center for animal exhibition, biological and veterinary research, conservation, and public education. To advance these programs, the Zoo must renew and increase its infrastructure equipment base.

The best research has always been designed with elegant simplicity, but even the simplest design now requires complicated instrumentation. Low-temperature freezers for tissue and gamete storage, sound-controlled rooms for the analysis of vocalizations, scintillation counters for genetic and hormonal studies, radio telemetry equipment to track wild animals, and high-resolution microscopes for virus identification are examples drawn from representative NZZ programs. And this list does not include computers. Such equipment is expensive, and most becomes obsolete within five years. Older models are disproportionately expensive to maintain, and their technical inferiority handicaps scientists.

The requested funding of \$425,000 will ensure that Zoo staff have equipment crucial to monitor and maintain the health of the live collection and to support the ongoing research programs. The Zoo will expand its plan for regular, cyclical replacement of important pieces of scientific equipment.

Infrastructure Requirements to Address Audit Deficiencies (2 workyears and \$199,000) - In December 1990, the Institution's Office of Environmental Management and Safety completed a review of the safety, fire protection, and environmental management programs at the National Zoological Park and the Conservation and Research Center. The review documented a number of deficiencies, and they are being addressed at this time. But in two areas, fire protection and motor vehicle fleet safety, the Zoo needs additional staff and support funds to fully address the issues raised in the safety report.

In the area of fire protection and prevention, the Zoo is working through outside contractors to correct the audit deficiencies. The majority of the work will be to bring all Zoo facilities up to the current fire and safety code requirements. Although all Zoo buildings were designed and constructed to meet the requirements of their time, many do not meet the current standards. To continue this valuable fire protection program, the

Zoo requests funding in FY 1993 to hire a fire alarm specialist (1 workyear and \$38,000) and to establish base funds of \$60,000 for the purchase of supplies and equipment.

The second issue identified in the safety report concerned vehicle maintenance at the Conservation and Research Center. The Center has a fleet of 51 vehicles and one full-time mechanic on staff. The average age of the vehicles in the fleet is 20 years. The condition and number of vehicles in the fleet require an increase in staffing. For FY 1993 the Zoo requests funds to add one automotive mechanic (1 workyear and \$36,000) to the Center's staff. The additional \$65,000 will be used to provide base funds for the purchase of supplies and equipment required for the fleet vehicle maintenance program at the Center.

Infrastructure Support for Current Programs (12 workyears and \$613,000) - In 1974, the Zoo began an energetic program of major construction and improvement based on its Master Plan. This construction program, coupled with the conversion from an animals-only zoological park to a biological park, has left the Zoo with base deficiencies in a number of critical areas. To operate and maintain the new facilities constructed under the Master Plan and the scheduled programs, the Zoo will require the support of additional staff and funding.

In January 1992, the Zoo will open the new Amazonia Exhibit. Less than a year later NZP will open the Amazonia Gallery Exhibit. Both exhibits along with other aquatic facilities scheduled over the next few years will require a high degree of water filtration and maintenance of mechanical support systems. To maintain the mechanical side of the new facilities, the Zoo requests funding for two water-quality specialists (2 workyears and \$72,000), two utility system repairers (2 workyears and \$72,000), two facility support workers (2 workyears and \$52,000), and an increase of \$107,000 in base funding to purchase supplies, materials, and water treatment chemicals.

NZP requests an increase of 6 workyears and \$310,000 to support the collection management aspects of the new facilities. The aquatic exhibits will be the first newly constructed facilities to fully incorporate the BioPark concept. The exhibits will highlight the relationships of animals and plants in a way that has not been accomplished in the traditional zoo setting. To meet the program goals for this exhibit cluster, the Zoo proposes to hire, in FY 1993, an aquatic biologist (1 workyear and \$51,000), three animal keepers (3 workyears and \$93,000), and two tropical gardeners (2 workyears and \$66,000). The remaining \$100,000 will provide a funding base for the purchase of aquatic animals (\$30,000), aquatic and tropical plants (\$10,000), new exhibit materials (\$15,000), equipment (\$25,000), and for the support of travel related to the exhibit acquisition program (\$20,000).

Support of Public Programs - Cultural Pluralism (2 workyears and \$100,000) - The National Zoo is an acknowledged world leader in zoo education. NZP has achieved this position through the development of learning laboratories that attract families, including those from the local Hispanic community, into a special learning environment. In Zoolab, Herplab, and Birdlab, families are actively engaged in learning about biology and conservation.

The Zoo's education programs achieve more than staff numbers would indicate because they are supported by thousands of hours of volunteer help from supporters of the Friends of the National Zoo. This funding request will further enhance the Zoo's public programs

at all levels, especially those educational outreach programs that currently involve local schools.

The requested funding for FY 1993 supports the hiring of a public programs specialist and an education specialist (2 workyears and \$70,000). The additional \$30,000 will allow NZP to purchase supplies and materials for its educational outreach programs.

The National Zoo sees the zoos of the world transforming themselves into arenas of education by developing public exhibits and interpretive materials that use the basic fascination of living animals and plants as the hooks on which to hang broad teaching. In the concept of the BioPark, the Zoo has the basis for a broadly holistic approach to integrating a wide field of human knowledge.

Global Change Program (5 workyears and \$500,000) - The fundamental problem of species conservation is to understand why some species survive and others become extinct when faced with major environmental challenges. The Zoo will assemble the full range of scientific expertise necessary to attack the problem of species survival.

The Zoo's Global Change Program is aimed at predicting animal extinctions. Combined data from a broad range of studies on captive animals and long-term monitoring of ten key species at field sites around the world will enable researchers to detect, document, and later predict evolutionary differences in the capacity of species to adapt to global environmental changes. The goal is to gain sufficient understanding to avoid future extinctions.

In FY 1993, funding will allow NZP to hire five new positions and provide base funding for the Zoo's Global Change Program. A cryobiologist (1 workyear and \$60,000) will collect, examine, and preserve gametes and embryos. A cytogeneticist (1 workyear and \$60,000) will study chromosomal variations and abnormalities within and between populations. A developmental psychobiologist (1 workyear and \$60,000) will examine natural and abnormal developmental trajectories of behavior and growth. A stress biologist (1 workyear and \$60,000) will develop physiological probes to measure various forms of stress and use the probes to monitor change as species become threatened. In addition, the Zoo will provide a clerical/technical support position (1 workyear and \$29,000) to support the scientific team. The balance of this request (\$231,000) will purchase supplies and equipment for the program and support foreign counterparts that will be essential to the research efforts abroad.

The approval of this request will fill critical gaps in the scientific disciplines represented at the National Zoological Park. The Zoo will add needed depth in areas such as behavior, genetics, and reproduction and apply additional financial support to addressing the issue of species survival.

International Environmental Education Programs (3 workyears and \$200,000) - The National Zoological Park has a long-standing commitment to the conservation of wildlife. Programs developed by the Zoo's Conservation and Research Center continue to be a leading force in the field of wildlife conservation. To strengthen efforts in this important area, the Zoo will expand its Wildlife and Conservation Training Program and the Zoo Biology Training Program.

The Zoo inaugurated the Wildlife and Conservation Training Program in 1981 to provide scientific training in wildlife conservation and management to nationals of developing

countries. Courses are designed to teach participants how to collect and use data to make informed management and conservation decisions. The Zoo initiated the Biology Training Program in 1987 to assist zoos in developing countries to increase their professionalism in education, captive propagation, and conservation and to achieve their full potential in increasing public awareness and appreciation of the environment and the ecological role of humankind therein. To meet objectives and to extend both programs to a wider audience, the Zoo will require additional resources.

For FY 1993, the Zoo requests two conservation training instructors (2 workyears and \$102,000) to support the Wildlife and Conservation Training Program. Additional staff support will allow the Zoo to conduct one class annually at the Conservation and Research Center and three to five courses each year in various overseas locations in Latin America, Africa, and Asia. An additional position, a biology training coordinator (1 workyear and \$60,000), will administer and teach the Zoo Biology Training course. This class will be given four to five times each year to mid-level zoo employees in the developing world. The additional \$38,000 will provide base funding for related expenses such as travel, supplies, and course materials for both programs.

The training programs are tried and tested, and significant improvements have been made in their implementation and administration. The programs have demonstrated their effectiveness through the productivity of the participants after training, requests from countries for continued training, and favorable evaluations by the participants. The funds requested in FY 1993 will go a long way toward ensuring the continued success of the training programs in crucial areas of wildlife conservation.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds come from a variety of sources, including allotments and fees for services and general use of the facilities by Trust-fund units or outside organizations. The Zoo uses these funds to support and maintain its facilities, purchase plants and animals for the collection, support multi-year fellowship programs, purchase scientific and research equipment, and support the salary and travel costs of the director.

Restricted Funds - Gifts and foundation grants continue to support training programs, research projects, and the acquisition of animals for exhibit purposes. In FY 1989 and again in FY 1990, the Zoo received outside funding to support the training of zoo professionals from developing nations in wildlife management, conservation, and zoo management. Since its creation in 1986, the New Opportunities in Animal Health Science Center has continued to receive financial support for its programs in biomedical research.

Government Grants and Contracts - The National Zoo receives direct and indirect support from various Government agencies and departments to support specific research projects. Zoo researchers in collaboration with investigators from the National Cancer Institute have studied the effects of genetic monomorphism on reproductive performance, endocrine status, and animal health. The research staff received financial support from the National Institutes of Health to study in vitro fertilization in domestic and nondomestic cat species. In association with the U.S. Department of Agriculture, the Zoo is expanding research efforts in the areas of sperm and embryo preservation, genetic engineering, and artificial breeding of domestic animals. The Zoo's medical staff is investigating the characteristics of a new primate hepatitis virus with a grant from the U.S. Department of Health and Human Services.

SMITHSONIAN INSTITUTION ARCHIVES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	16	682	6	215	-	-	-	-	-	-
FY 1992 Estimate	16	721	6	215	-	-	-	-	-	-
FY 1993 Estimate	20	953	6	215	-	-	-	-	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Smithsonian Institution Archives (SIA) is the official repository of Smithsonian Institution records and related historical documentation. SIA is the Institution's means of assuring systematic, comprehensive historical accountability of its national public trust. SIA supports Smithsonian research, management, and planning; serves other scholarly research and public inquiry; and provides advice to archival research programs in and outside the Institution. As the Smithsonian grows, ages, and diversifies, SIA accommodates, preserves, and manages a constantly increasing volume and an ever-changing technological variety of Institutional records and other pertinent historical documentation.

Located in the Arts and Industries Building, the facility is convenient to principal users. A records center on North Capitol Street holds inactive records awaiting disposition. Remote storage for records that exceed central storage limits is located in leased space in Springfield, Virginia. Modification of an existing building at the Conservation and Research Center, Front Royal, Virginia, is under way for security storage of documents.

For FY 1993, SIA requests an increase of 4 workyears and \$232,000 for archival staff, supplies, and storage equipment.

PROGRAM - SIA surveys official records and scholarly research files, appraises their historical research potential, schedules those of lasting evidential and informational value for acquisition and accessioning into its custody, and conducts oral and video history interviews to complement and supplement the written Institutional record. SIA manages the archives thus acquired to preserve, arrange, and describe them so as to make them useful for research. SIA assists scholars and other researchers in using the archives and responds to public inquiries for archived information. SIA gives advice to and shares archives and oral history experience and expertise with other archives and museums.

Records Scheduling and Collections Acquisition - In FY 1991, SIA completed surveys, appraisals, disposition recommendations, and scheduling of records and scholarly research

files in 17 Smithsonian offices and subbureau departments. A records disposition schedule was issued for the Archives of American Art. Surveys and consultations on the management and disposition of records and archives continue with the staff of the National Museum of the American Indian and the Smithsonian African American Association. SIA accessioned 275 hours of videotape and accompanying transcript material as the result of a four-year experimental video history project funded by the Sloan Foundation and conducted by Smithsonian historians.

Archives Management - Work continues on long-term projects processing and preserving architectural drawings. SIA replaced 2,500 nitrate negatives with safety film copies. The Archives provided opportunities for hands-on training for conservation interns of the Conservation Analytical Laboratory. In cooperation with the Smithsonian Institution Libraries, SIA prepared records of Smithsonian involvement in 19th-century expositions for microfilming and commercial distribution to libraries and research centers. Collection-level guides were published for the papers of Alexander Wetmore, sixth Secretary of the Smithsonian Institution, and for records of the National Zoological Park, 1887-1965. Long-range planning in cooperation with the Office of Design and Construction continues for a libraries and archives facility at Suitland, Maryland.

Research and Reference Service - SIA holdings contributed to research in Native-American history, the history of international scientific communications, and diverse biographical and historical research projects. Several scholars from abroad were among those who used the Archives' document collections.

Outreach - Archival and museum personnel from Kenya, Japan, China, and Central America were among three dozen visitors to SIA for archives management and oral history information. SIA conducted a one-day workshop on oral history for representatives of Micronesian archives and museums.

Statistical Summary of SIA Activity

	<u>FY 1989</u>	<u>FY 1990</u>	<u>FY 1991</u>
Total Holdings at Year-end (cubic feet)	15,288	16,066	17,066*
Accessions Added (cubic feet)	895	1,045	1,000*
Reference Inquiries	1,424	1,246	1,510*
Items Provided to Researchers	5,625	6,009	5,083*
Pages of Copy Provided to Researchers	16,134	26,554	19,546*

* FY 1991 figures projected, based on activity through end of second quarter.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, SIA requests an increase of 4 workyears and \$232,000 for archival staff, supplies, and storage equipment.

Archival Staff, Supplies, and Storage Equipment (4 workyears and \$232,000) - SIA archival capacity has not kept pace with growth in the volume and variety of Institutional records over the past three decades. SIA needs additional resources to survey, acquire, preserve, and process vital records and associated documentation, making them available for public reference and assuring future availability for reference.

The requested funding will increase preservation, processing, and accessibility of vital records and associated documentation by approximately 15 percent over present capacity. With this funding, SIA will:

- survey and bring under archival disposition annually an additional 1,000 cubic feet of paper files, photographs, audio recordings, video recordings, motion picture films, and machine-readable computer records from six to eight of the more than 400 records-producing entities of the Smithsonian Institution;
- arrange, describe, and preserve each year an additional 100 cubic feet of vital records and other historical documentation already accessioned into the Archives;
- develop specialized expertise to handle inquiries and research requests for visual, audio, and computerized records information; and
- provide archival storage for an additional 1,600 cubic feet of records per year at 1991 costs.

To conduct these activities, SIA requests funds to hire two archivists (2 workyears and \$84,000) and two archive technicians (2 workyears and \$58,000). Support funds (\$50,000) will procure training, computer hardware and software, and archival supplies necessary to make the Archives' collections available for public research. Additional funds (\$40,000) will buy shelving and cabinets for safe-keeping the increasing volume of archival materials.

This request is not for a project. It represents an investment to ensure the permanent availability of a public trust's vital records commensurate with Institutional growth in general and the explosion of Institutional records in particular. While the volume and variety of Institutional records has increased many times over the past three decades, the dollar per cubic foot investment in Smithsonian Archives has degraded approximately 16 percent between 1978 and 1990, despite some annual inflationary increases. This base erosion will continue and is likely to accelerate with the addition of new bureaus, offices, and initiatives as the momentum of Smithsonian public service continues. Every expansion adds to the volume, complexity, and scope of materials SIA must preserve and manage in the interests of a sound and reliable Institutional record to respond to public inquiries, scholarly research, and public accountability.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Provided by annual allotments, these funds cover the salaries, benefits, and support costs for an archivist and an archives technician. In addition, funds support a temporary archives specialist, three program assistants, and support costs for a survey and publication of guides to photographic collections of the Smithsonian Institution. In FY 1991, the Research Resources Grants program awarded SIA \$40,000 for historic architectural drawings conservation.

SMITHSONIAN INSTITUTION LIBRARIES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	106	5,574	12	575	-	2	-	-	-	-
FY 1992 Estimate	106	6,099	12	635	-	11	-	-	-	-
FY 1993 Estimate	110	7,107	12	635	-	12	-	-	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Smithsonian Institution Libraries (SIL) supports the mission of the Institution "for the increase and diffusion of knowledge" by providing information in all forms to Smithsonian scientists, scholars, curators, and staff, as well as others with research needs. The Libraries accomplishes this purpose by building, organizing, managing, housing, and preserving collections; providing reference services and consultation; employing all appropriate technologies for finding and disseminating information; and contributing to and drawing from remote bibliographic and research data bases. The Libraries participates in local, national, and international networks and cooperative activities that promote the sharing of information, access to recorded knowledge, and support and advancement of scholarly communication.

For FY 1993, SIL requests an increase of 4 workyears and \$1,008,000 for new and ongoing program acquisitions (\$400,000); reduction of cataloguing backlogs (1 workyear and \$380,000); library research equipment (\$75,000); a rare book librarian (1 workyear and \$42,000); development staff (2 workyears and \$71,000); and a minority professional training program (\$40,000).

PROGRAM - SIL supports multi-disciplinary research at the Smithsonian by providing research services, collections acquisitions and management, and outreach programs. SIL's collections number more than 1,101,000 volumes and include 15,000 current serial titles, 40,000 rare books, and more than 1,800 manuscript units. By centralizing acquisitions and cataloguing, reference and information services, preservation and conservation efforts, and administrative services, SIL gains operational and cost efficiencies.

SIL's staff uses computer support and electronic technology for most internal library operations and for resource sharing and communication with other libraries. The Smithsonian Institution Bibliographic Information System (SIBIS) provides access to collections through an on-line catalogue. In FY 1991, SIL added capabilities for Boolean searching to the catalogue, allowing users to combine in one search a number of selection criteria. SIBIS is also used for acquisitions, cataloguing, and increasingly for circulation and inventory control.

The Libraries automated its circulation records in three locations in FY 1991: the Cooper-Hewitt Museum Branch in New York City, and the Botany Branch and the Mollusks Library of the National Museum of Natural History Branch. Eleven of SIL's 17 locations are now using automated circulation. SIL also installed automated circulation at the library of the National Museum of American Art/National Portrait Gallery, for which SIL provides support services.

Research Support Service - SIL provides daily, direct support to researchers from 17 branch libraries, including Central Reference and Loan Services and from the Dibner Library of the History of Science and Technology in the Special Collections Department. All branches offer sophisticated subject expertise to provide users with the information they request. The Libraries' staff searches on-line data bases and queries national networks to find and retrieve requested items and information. SIL contracts with commercial document delivery services to provide hard-to-find and highly specialized materials. The James Smithsonian Society awarded SIL \$50,060 to establish a CD-ROM (compact disc, read only memory) searching center in FY 1992 that can be used by researchers across the Institution through dial-up capabilities.

In FY 1991, SIL established three task forces of library staff to conduct studies on data base searching needs, delivery service, and user needs. In April, 30 marine science librarians and information specialists from the Washington, D.C., metropolitan area attended a workshop organized by SIL. During the same month, SIL issued the first notices in appropriate publications of the SIL/Dibner Library Resident Scholar Program, funded by the Dibner Fund. SIL will select up to two scholars every calendar year to use the resources of the Dibner Library and other parts of SIL for research into the history of science and technology. SIL published a Users Guide that provides information about the system's 17 branches and the collection interests of each. Several branches prepare and distribute bibliographies and new-title lists to interested scholars and libraries in the United States and abroad. This year eight branches produced new-title lists and/or bibliographies including the branches at the National Museum of African Art and the National Air and Space Museum, the National Zoo, the Office of Horticulture, the Anthropology Branch in the National Museum of Natural History, and the libraries of the Smithsonian Tropical Research Institute, the Museum Reference Center, Central Reference and Loan Services, and the Dibner Library.

Collections Acquisition and Care - SIL houses its collections in Smithsonian buildings in Washington, D.C., and other locations, including Edgewater, Maryland; Cambridge, Massachusetts; New York City; and the Republic of Panama. SIL controls its collections and makes them available to institutional and worldwide researchers by systematically describing materials and entering them into the SIBIS On-line Catalogue and into the On-line Computer Library Center (OCLC), a national bibliographic data base. SIL continues to supplement in-house cataloguing with contract cataloguing and to convert manual records to machine-readable data.

SIL acquires materials through purchase and an active gift and exchange program with more than 3,360 partners in 122 countries worldwide. Escalating costs of journals reduced SIL's ability to supply scholars with the same numbers of journals as were available in the past. Limited funds for acquisitions have not permitted SIL to purchase materials to support new Institutional programs in molecular systematics and other fields within the Institution's special interests.

In FY 1991, SIL consolidated staff offices of its Preservation Services Department at 1111 North Capitol Street. The department staff began operation of a Brittle Books Section, which is charged with preservation of SIL's general collections. The Binding Services Section, which prepares books and journals for shipment to commercial binderies, also relocated to the new offices. SIL's Book Conservation Laboratory, established in 1976, is responsible for repairing and reconstructing rare and valuable books in the special collections, preparing materials for SIL exhibitions and exhibition loans, and attending to disasters including water damage, mold, and insect infestation.

Outreach - SIL inaugurated an Honorary and Memorial Gifts Program in FY 1991, mailing a brochure on Gift Information for Donors to the Institution's research staff and other interested individuals within and outside the Institution. The gifts will purchase books for the collections. The development program was initiated with an appeal from the director to donors who had previously made in-kind gifts to the collections.

SIL serves the wider scholarly community and the public through outreach programs including publications, lectures, and exhibitions. SIL opened its first public Exhibition Gallery in October 1990. Adjacent to the SIL's Dibner Library of the History of Science and Technology, on the first floor of the National Museum of American History, the gallery is now the Libraries' principal vehicle for displaying to the public the richness and variety of the treasures in the Libraries' special collections. SIL's staff secured funding from Institution sources to mount the first two exhibitions. The inaugural exhibition, "Turning over Old Leaves: A Sampler of Written Records," drew on manuscript materials that included letters of Galileo, Charles Darwin, and John James Audubon; a notebook of Alexander Graham Bell's experiments concerning mechanical flight; and a personality survey completed by Albert Einstein. In support of the Institution's special interest in cultural diversity, SIL created exhibitions in FY 1991 that presented books and other materials dealing with Southeast Asia and with Africa. "Nusantara: Lands and Peoples of Indonesia," part of the international Festival of Indonesia, displays vibrantly colored books and manuscripts describing early European and American voyages of discovery to the Indonesian archipelago. The National Museum of African Art cooperated with SIL in organizing and presenting "Africa Illustrated: Fantasy and Reality before 1900," an exhibition of books on Africa published from the 17th to the 19th centuries. Both the Indonesian and the African exhibitions featured illustrated brochures. SIL continued its Library Hall exhibitions in SIL's central administrative area of the Natural History Building, displaying materials from its branch library collections. This year SIL presented pop-up books from the Cooper-Hewitt Museum of Design Branch and "A Growing Collection," featuring materials from the Horticulture Branch.

In FY 1991, SIL received a grant from the Regents' Special Exhibition Fund for a FY 1992 exhibition and symposium on world's fairs. The National Museum of American History will co-sponsor the event. In November and July, SIL staff participated in the Second White House Conference on Libraries and Information Science. Directors of member libraries of the Association of Research Libraries came to SIL for a reception and exhibition viewing during the Association's semiannual meeting in October. With funding from the Special Foreign Currency Program, SIL administers the Science Information Program of translations, which has brought 263 translations of books into print since 1960. SIL published two new translations this year: The Role of Scent Glands in Pollination (translated from German) and Fundamentals of Paleontology, vol. 9 (translated from Russian). Nearly 30 additional titles are in various stages of production.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, SIL requests an increase of 4 workyears and \$1,008,000 for new and ongoing program acquisitions (\$400,000); reduction of cataloguing backlogs (1 workyear and \$380,000); library research equipment (\$75,000); a rare book librarian (1 workyear and \$42,000); development staff (2 workyears and \$71,000); and a minority professional training program (\$40,000).

Acquisitions for New and Ongoing Programs (\$400,000) - For several years, SIL has struggled to provide adequate support for long-standing research programs while trying to meet the needs of the Institution's new initiatives. Simultaneously a static acquisitions budget has shrunk in real buying power due to inflation and a weaker dollar abroad. In the last three years alone, the Institution has added or enhanced several research programs in the sciences. These include the Laboratory for Molecular Systematics at the Museum Support Center, the Migratory Bird Center and a genetics laboratory at the National Zoological Park, and the Center for Arctic Studies in the Department of Anthropology at the National Museum of Natural History.

Other Smithsonian offices are expanding their programs to serve the needs of a more culturally diverse audience. There is a substantially growing demand for books and journals related to the history and cultures of Native Americans, African Americans, Hispanics, and others. The Institution is also placing increasing emphasis on education, especially at the elementary and secondary levels. SIL's collections are not strong in resources for students below the college level. At the same time, the Institution's traditional ongoing research programs continue.

Dramatic inflationary increases in the costs of journal subscriptions (30 percent between 1990 and 1992 alone) have curtailed SIL's ability to purchase new journals for some years. More than 500 subscriptions have been canceled since 1987. Funds normally assigned to book purchases must now be used for journal subscriptions. Thus annual purchases of new books, especially important for research in history and the arts, have fallen by 40 percent. While older materials can be obtained through interlibrary loan, new books and journal articles are often in high demand and therefore essentially unavailable through interlibrary loan. Current information is extremely important to the scientific research community. There is no convenient substitute for housing needed journals on site.

The requested increase of \$400,000 will restore SIL's ability to support traditional programs and to begin to assist new initiatives. SIL actively seeks advice and relies on requests from curatorial and research staff as a guide to the purchase of books and journals. As one example, the director of the Laboratory for Molecular Systematics forwarded a list of 37 journals considered critical for the Laboratory's work that are not currently available in SIL's collections. The 16 highest-priority subscriptions alone will cost more than \$16,500 annually. Without the requested increase, SIL will be unable to respond to this or similar requests. If the Institution is to meet its stated goal of education and emphasis on biodiversity and cultural diversity, its libraries must provide the information and materials required to support new and ongoing research and programs.

Reduction of Cataloguing Backlogs (1 workyear and \$380,000) - To make its collections accessible to researchers, SIL catalogues materials in its collections and creates an on-line record for every item. As of August 1991, SIL has more than 280,000 uncatalogued items not readily known to users of the collections or to SIL staff. Uncatalogued items are difficult or nearly impossible to locate. SIL staff are on occasion forced to purchase or request on interlibrary loan items needed by users. Some of the items already exist

in the collections but cannot be located because they are not in the on-line catalogue. This practice is a poor use of the collections, when staff is thinly spread and timely location of materials for researchers is crucial to the Institution's mission. With existing base resources, it will take an estimated 25 years for SIL's staff to create records for these uncatalogued materials.

SIL plans to make the uncatalogued items available to researchers by increasing the volume of contract cataloguing. The records created will be added to SIL's on-line catalogue in SIBIS and entered into a national on-line bibliographic utility, OCLC, which is used by 10,000 member libraries for interlibrary loan, cooperative cataloguing, and other resource sharing. The catalogue records will provide an inventory of previously uncontrolled materials. A significant part of the backlog project will consist of cataloguing SIL's unique trade literature collection.

SIL will use \$350,000 of the requested increase to hire a contractor to catalogue backlog items. This funding increase will reduce the backlog processing time by approximately 13 years. All catalogue records created will be in conformance with SIL and national standards. In addition, SIL will hire a library technician (1 workyear and \$30,000) to prepare, process, and provide quality control for materials sent out and received from the contractor.

SIL owes the Institution's researchers, as well as researchers nationally, access to all library materials in its collections. These uncatalogued materials are important and include many unique items bought from collection funds, received from one of SIL's exchange partners, or carefully selected from gifts by generous donors. As SIL catalogues its backlog, bibliographic records of these materials are entered in both SIBIS and OCLC. The Smithsonian library's users and researchers around the United States will benefit as books already in the collections are catalogued and therefore properly identified to the national audience. On-line records for all items in the SIL collections will save researchers' time, provide accurate information, prevent unnecessary interlibrary borrowing or duplicate purchases, and afford better sharing of information with other research organizations.

Library Research Equipment (\$75,000) - SIL, like other research and Federal libraries, relies heavily on equipment to make information accessible to its users. SIL can respond quickly and effectively to inquiries from Smithsonian staff and external patrons by using microform reader printers, personal computers, copiers, and telefacsimile machines to receive and transmit information for users.

SIL needs high-quality equipment to adequately control, manipulate, and access the mass of data represented by both SIL's holdings and those of other research libraries accessible to SIL either in microform or electronically. To maintain a high level of access, SIL must have enough equipment for all its locations, and the equipment must be systematically upgraded and replaced.

The requested increase will allow SIL to establish a stable funding base for this purpose and begin a program of systematic upgrading and replacement of critical equipment. This program will prevent reliance on emergency replacement after equipment failure. It will lessen the likelihood of service interruption caused by equipment breakdown.

A program of systematic equipment maintenance and replacement will assure proper support for the research and program goals of the Institution. Properly functioning

equipment is crucial for SIL users' ability to gain timely, accurate, and complete information necessary to support research and other Smithsonian program needs.

Rare Book Librarian (1 workyear and \$42,000) - SIL seeks to hire a professionally trained rare book librarian to plan, organize, and staff a natural history rare book room. The facility, to be constructed in the National Museum of Natural History in FY 1993, will allow SIL to consolidate its natural history rare book collections of over 10,000 volumes. Natural history has been a principal subject of inquiry since the Smithsonian was founded. Consequently, materials in SIL's natural history collections have, over time, become increasingly rare and valuable. Many of these volumes are now in fragile condition. These collections are currently scattered among 13 locations in three buildings. While SIL security locks some collections in cabinets or cages, space constraints and lack of staff for evaluation force SIL to leave valuable volumes in open stacks.

SIL estimates that its holdings of valuable natural history works exceed 10,000 volumes. The collection includes sets of John James Audubon's Birds of America and Viviparous Quadrupeds valued between \$2 and \$3 million, placed on deposit by the National Audubon Society. Natural history rare books are the most heavily used of SIL's special collections. It is not uncommon for researchers or visiting scholars to consult ten to 25 volumes in a day. Yet the value of these books and their vulnerability to theft, mutilation, or mishandling require storage in environmentally controlled and physically secured quarters. Users of rare books frequently require guidance from the specialized knowledge that a rare book librarian possesses. Further, SIL policy stipulates that a library staff member must always be present when rare books are being consulted.

Hiring a rare book librarian (1 workyear and \$42,000) in FY 1993 will allow SIL to begin organization and preparation of the rare book collections for their move to the new facility. The librarian will also participate in plans for equipping and staffing the library and will develop appropriate access procedures. Management of the Natural History Museum has expressed interest in exhibitions of rare books. The librarian will organize exhibitions as appropriate space is made available.

Consolidating the natural history rare books in one space under full-time management will make research and consultation more efficient for all Smithsonian staff. SIL staff will provide proper environmental care and security for these collections. Even more important, for the first time these collections will also be more visible and accessible to the public.

Development Staff (2 workyears and \$71,000) - SIL must broaden its base of financial support if it is to fulfill its mission of providing information and research support for the Institution's staff. In this age of expanding information needs and new technologies, SIL's budget is inadequate to support its current responsibilities of supplying needed library materials and access to them. A related mission--to provide stewardship of the collections that have been entrusted to SIL's care and to ensure their continued availability to present and future generations of scholars--also requires increased funding. Inflationary trends in the costs of books and journals have diminished SIL's ability to increase its collections. SIL is unable to provide scholarly support for the new research initiatives that the Institution has undertaken in exemplifying the Nation's pluralism, understanding the global environment, and other recent efforts.

With additional funds raised through development efforts, SIL can begin to respond to the Institutional goal to devote detailed attention to the care and preservation of

collections by carrying out preservation projects. Besides building endowments and adding to the collections through direct gifts, monies raised by development efforts can pay for programs and for minority interns, for projects designed to preserve the collections, and for underwriting SIL's Exhibition Gallery.

With the requested funds, SIL will hire a development officer and an assistant (2 workyears and \$66,000) to secure ongoing contributions to endowment funds, general operating expenses, and special projects. An additional \$5,000 will fund travel expenses. The development officer will serve as liaison to the Institution's Office of Development, working closely with that staff in creating a fund-raising program for SIL. The development staff will identify available resources in the private sector and conduct research on prospective individual and corporate donors with the assistance of the Office of Development and the Office of Sponsored Projects.

With the addition of staff to work exclusively on development, SIL will establish a viable and ongoing development program. The new development staff will focus efforts directly on fund-raising projects. Development staff will identify prospective donors, promote the Gifts program, prepare funding proposals, and raise funds for specific projects, including support of preservation needs.

Minority Professional Training Program (\$40,000) - Currently only 10 percent of SIL's professional staff are members of minority groups. A training program will make SIL more visible and attractive to prospective minority employees. The program will increase the SIL's ability to compete successfully with other research libraries for minority candidates. The program will also provide an educational experience to enhance the career potential of a minority library professional. It will enlarge the pool of qualified minority candidates for employment in SIL and at other research libraries.

The requested increase will allow SIL to establish a long-term professional training program for minority candidates planning a career in research librarianship. The program will provide a valuable two-year entry-level employment opportunity for a minority professional. SIL will conduct a national competitive recruitment to select a candidate with a recently awarded professional degree in library and information science. After this appointment, the professional will be better prepared to compete in the job market for more senior positions at SIL and at other research libraries. The funding will pay the candidate a stipend (\$35,000) and provide \$5,000 for outside training and travel costs.

SIL will absorb the cost of recruitment and selection, internal training, and administrative and technical support. SIL is currently seeking nonappropriated funds to expand the program to support more than one trainee.

A minority professional training program will fulfill the Institution's goals of enhancing SIL's capacity to operate in a culturally diverse environment. The result will be a higher percentage of minority professionals on SIL's staff. Additionally, the program will bring professional enrichment to minority library professionals and help to further their career goals. Over time, SIL will be able to make a significant contribution through this program by increasing the pool of experienced minority professionals in the library field.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - An administrative allotment funds administrative salaries and related support costs, including travel, training, and supplies. A program allotment supports such special events as public lectures and seminars.

Restricted Funds - Gifts and grants from individuals, foundations, endowments, organizations, and corporations provide these funds for specific purposes. In FY 1991, SIL received funding for an exhibition and symposium on world's fairs to be held in early 1992. In addition, an award was granted to establish a data base searching center for researchers with up-to-the-minute published scientific information.

INTERNATIONAL ENVIRONMENTAL SCIENCE PROGRAM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	14	828	-	-	-	-	-	-	-	-
FY 1992 Estimate	18	1,097	-	-	-	-	-	-	-	-
FY 1993 Estimate	24	1,420	-	-	-	-	-	-	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The International Environmental Science Program (IESP) is a multi-bureau interdisciplinary effort to coordinate the Smithsonian Institution's long-term monitoring and study of unique and significant ecosystems. The goal of the Program is to evaluate and eventually to predict the impact of human activities and natural change on selected ecosystems. Research sponsored by IESP occurs at two permanent Smithsonian sites--the Smithsonian Tropical Research Institute (STRI) in Panama and the Smithsonian Environmental Research Center (SERC) in Edgewater, Maryland--and several nonpermanent sites throughout the world.

For FY 1993, the Institution requests an increase of 6 workyears and \$323,000 for global change research at the Smithsonian Environmental Research Center (2 workyears and \$150,000) and for expansion and strengthening of long-term monitoring at the Smithsonian Tropical Research Institute (4 workyears and \$173,000).

PROGRAM - The International Environmental Science Program supports Smithsonian research to meet the urgent need for long-term studies of the world's ecosystems, especially in tropical and subtropical regions where the rapid rate of tropical deforestation, loss of suitable soil, and resulting threat to wildlife are of critical importance to biological diversity and global change. The Program provides funds for teams of scientists, both Smithsonian staff and collaborators, to monitor natural variations in specific environments undergoing human change.

Scientists maintain permanent IESP research sites at the Rhode River Estuary at Edgewater, Maryland, and in the tropical lowland forest of Barro Colorado Island (BCI) in Panama and the Galeta Reef on the Atlantic side of the Isthmus of Panama. For more than 20 years, scientists have gathered information for a data base on the biological, physical, and chemical components of various ecosystems. Analyses of these data have produced speculations and verifiable hypotheses about long-term patterns in climate and disturbances resulting from human activity.

Research sponsored by IESP also takes place at nonpermanent sites on Aldabra in the Seychelles and in Venezuela, Brazil, Mexico, and the Amazonian regions of Peru and Bolivia. Smithsonian scientists, with support from the host governments, are continuing their efforts at these sites to gather descriptive data.

The following summaries highlight IESP's most significant accomplishments for FY 1991 at the Program's permanent and nonpermanent sites.

Edgewater, Maryland - A mathematical model tested the relative timing and impact of storm runoff from the Rhode River watershed and from the Susquehanna River, the largest tributary of the Chesapeake Bay. The model predicts changes in key nutrient concentrations in the upper and lower reaches of the Rhode River and how these changes in nutrients and exchange rates affect algal populations. The model was verified with two data sets. The results indicate that storm runoff from the Rhode River watershed produces algal blooms of small scale and short duration, whereas Susquehanna River storm discharges, after a delay of 12 days, cause algal blooms over larger areas for longer times. It is now possible to assess quantitatively how regional weather and land use affect tributaries of the Chesapeake Bay by interactions with local events.

Panama - IESP-funded research on Barro Colorado Island (BCI) continues to expand understanding of global change. One major study is examining seasonal and longer-term fluctuations of the amount of light available on the forest floor. Low light levels limit the growth of tropical forest tree seedlings in the understory. Staff has nearly completed a ten-year study of forest light environment on BCI, using computer image-processing techniques developed at STRI. One unexpected finding is that tree falls provide increased light at ground levels for only four years before deep shade is restored. Tree seedlings, therefore, have only a brief period in which to become established in the forest. This study will contribute to more effective management and conservation of tropical forests.

At Galeta, long-term monitoring of reef and mangrove communities continues to provide valuable data on the impact of the April 1986 oil spill on these areas. Evidence gathered to date indicates that the effects of oil spills on tropical marine habitats are more severe and long lasting than previously suspected. In addition, regular monitoring of sea level at Galeta provides data on a critical aspect of global climatic change.

Aldabra - Studies on the marine and terrestrial fauna and flora of the atoll continue to provide baseline data for comparative ecological and biogeographic projects. In FY 1991, researchers monitored the endangered hawksbill turtle and giant tortoise populations and proceeded with laboratory studies of the systematics of the marine and anchialine crustacean fauna and sinkhole molluscan fauna. Scientists in IESP's Aldabra program published two papers dealing with the feral goat population, a destructive predator on the atoll, and two papers on the heteropterous insect fauna of Aldabra.

Venezuela - A continuing 16-year demographic study of several social groups of the red howler monkey helped document infant adoption and incest avoidance in this species. These findings help set in context long-term strategies for managing this significant group of primates in the wild and in zoos.

Brazil: Golden Lion Tamarin Project - By the summer of 1991, 33 of 91 reintroduced tamarins bred in zoos (36 percent) remained from those released between 1984 and 1989, and 38 young survived from 57 born (67 percent). Altogether, there are 71 more tamarins in

the wild as a result of the Institution's reintroduction program, making this one of the most successful animal reintroduction programs ever undertaken.

The Poco das Antas Reserve was seriously damaged in early 1990 by a major fire that broke out during an unusually dry wet season. Nearly 25 percent of the Reserve was burned, and scientists estimate that forest regeneration was set back up to ten years as a result. The fire will also delay efforts to increase the small population of golden lion tamarins within the Reserve. Scientists are continuing several projects to chart the effects of the fire. Findings will help scientists and land managers understand how to rehabilitate damaged ecosystems in the tropics.

Latin America: Neotropical Lowland Research Program - In FY 1991, scientists conducted field and laboratory work in archeology, botany, entomology, herpetology, and ichthyology on the Amazonian and Atlantic forest biota of Brazil and Peru. Results of these investigations provide new information on the composition and distribution of the neotropical biota that is important for the completion of conservation planning and several major publications. A milestone in the ichthyology project is the completion of the final monograph on the Family Curimatidae, which is distributed throughout the lowland freshwaters of Latin America. This family has several economically important members whose identifications were confused prior to the revisionary studies supported by IESP and which are critical to understanding the relationship between evolution and geography. Long-term IESP support made it possible to examine more than 50,000 specimens in South American museums and to collect in regions necessary to resolve the numerous species questions that pervaded the previous taxonomy and life histories of the family.

Mexico - Research on the Yucatan Peninsula continues to focus on the recovery of the forest from extreme damage caused by Hurricane Gilbert and subsequent fires. Recovery of trees has been much more rapid than predicted, and high rates of tree growth have been attributed to the massive infusion of nutrients, especially phosphorus, provided by decomposing leaves and wood resulting from the hurricane. The bird community has also recovered rapidly, and almost all species present before the hurricane have now returned. These findings, along with findings in Brazil, provide comparative bases for analyzing ways to assist in rehabilitating damaged tropical and semitropical forests.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, the Institution requests an increase of 6 workyears and \$323,000 for global change research at the Smithsonian Environmental Research Center (2 workyears and \$150,000) and for expansion and strengthening of long-term monitoring at the Smithsonian Tropical Research Institute (4 workyears and \$173,000).

Global Change Research at the Smithsonian Environmental Research Center (2 workyears and \$150,000) - Collection of long-term data on the effects of habitat disruption on global atmospheric compositional change is important for improved management of natural resources. Long-term measurements of key trace gas exchange rates between different plant communities and the atmosphere and studies of how various ecosystems respond to changing atmospheric composition will improve the ability of scientists to model the course of global change.

Monitoring of how increased concentrations of carbon dioxide directly affect the productivity of plant communities, water use efficiency, and species composition will allow for better predictions of how these plant communities will in turn affect the carbon dioxide concentration and water vapor content of the atmosphere. These are key variables in global general circulation models used to predict climate change. Measurements of other

radiatively active trace gas exchanges, such as nitrous oxide and methane, are also needed. To conduct these measurements, the Institution requests 2 workyears and \$150,000 to hire two physical science technicians (2 workyears and \$64,000) and provide support funding (\$86,000).

The SERC Rhode River site has been selected, through national peer competition, as one of 25 sites best suited for long-term ecological research as part of the U.S. Global Change Program. SERC is also a site in the network of the International Geosphere-Biosphere Program (IGBP). Each site represents an important regional ecosystem and an established base for collecting long-term data on a large number of environmental variables. Data emanating from this research will have a profound impact on regional and national efforts to preserve and enhance the quality of the environment.

Long-term Monitoring at the Smithsonian Tropical Research Institute (4 workyears and \$173,000) - The Isthmus of Panama is an exceptional site from which to monitor environmental conditions. Biologically, Panama acts both as a land bridge allowing interchange of North and South American biota and as a barrier impeding the passage of organisms between the Atlantic and Pacific oceans.

Climatically, Panama acts as a major funnel for atmospheric moisture. The low elevation along the narrow Panamanian landbridge allows atmospheric moisture from the Atlantic to flow, nearly unimpeded, to the Pacific. Change in the strength of this flow is likely to be a strong indicator of environmental effects such as global warming and to be linked to changes in salinity and major ocean currents. Using the exceptional meteorological and hydrological data collected because of the presence of the Panama Canal and the core monitoring program of STRI, IESP scientists have been able to document a long-term decrease in rainfall on the Isthmus over the past century. Monitoring in Panama has provided exceptional documentation of both marine and terrestrial effects of three "El Nino" events--including the 1982-83 event, the strongest of the century and perhaps of several centuries.

Two core coordinators (2 workyears and \$122,000) will be responsible for managing all aspects of the long-term monitoring of the physical environment as well as selected baseline population surveys at marine and terrestrial sites, respectively. Additionally, the coordinators will serve to integrate and manage the program at each site, to seek methodological comparability with other monitoring programs, and to pursue program expansion and alternative funding possibilities.

The Institution also seeks funding for this program at STRI for one technician (1 workyear and \$18,000) to record, service, maintain, and remove data from data acquisition equipment for physical variables on Barro Colorado Island. Finally, a data manager (1 workyear and \$33,000) will administer the long-term data sets, prepare annual data summaries, and manage data entry and validation. The rapid and complete analysis of IESP data sets is critical to the success of this program.

Long-term studies such as these are essential in detecting, monitoring, and ultimately understanding regional and global environmental change.

MAJOR SCIENTIFIC INSTRUMENTATION

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	-	4,882	-	-	-	-	-	-	-	-
FY 1992 Estimate	-	8,119	-	-	-	-	-	-	-	-
FY 1993 Estimate	-	10,219	-	-	-	-	-	-	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The development of major scientific instrumentation is vital to enable Smithsonian scientists to remain at the forefront of their fields. Because of the magnitude of the costs and the time scale required to fabricate new instruments and to reconfigure existing ones, the Institution requests funding for such projects under this line-item rather than under individual bureau line-items. Since these projects will, of necessity, require long-term development and multi-year funding, the Institution also requests that funds in this line-item be available until expended.

For FY 1993, the Institution requests no-year funding of \$10,219,000 to continue construction of the submillimeter telescope array (\$5,886,000) and conversion of the Multiple Mirror Telescope (MMT) (\$2,314,000), to develop instrumentation for the converted MMT (\$819,000), and to initiate development of a canopy access system (\$1,200,000).

The FY 1993 request includes the following increases above the FY 1992 level: an increase of \$300,000 for the submillimeter telescope array (over the FY 1992 base of \$5,586,000), an increase of \$700,000 for the development of instrumentation for the converted MMT (over the FY 1992 base of \$119,000), and an increase of \$1,200,000 for the development of a canopy access system. These increases are offset by a reduction of \$100,000 in the funding required for the conversion of the MMT (from the FY 1992 base of \$2,414,000). In addition, the Institution asks for an increase in the funding for the personnel costs associated with the submillimeter telescope array and canopy access system as one-year funding in the Smithsonian Astrophysical Observatory (SAO) line-item and in the Smithsonian Tropical Research Institute (STRI) and Smithsonian Environmental Research Center (SERC) line-items respectively. However, the justifications for those positions is included here because of their relationship to the Major Scientific Instrumentation request.

PROGRAM - The development of major scientific instrumentation, such as telescopes, requires research and development (R&D) over an extended period of time. Teams of

Smithsonian scientists, technicians, and contractors, are focused on critical telescope elements such as optics, detectors, receivers, and support structures; and other Smithsonian staff are concentrated on the development of instruments to permit physiological and microclimatic analyses for canopy biology. To facilitate the unique, extended R&D efforts that are integral to the acquisition of major scientific instrumentation, the Institution established this no-year line-item in the FY 1989 budget.

Since FY 1989, the Smithsonian has received funding under this line-item for two projects for the Smithsonian Astrophysical Observatory: the development of an array of submillimeter telescopes and the conversion of the Multiple Mirror Telescope (MMT). Both of these forefront scientific projects involve the fabrication of major new instrumentation that will take a number of years to complete.

SAO expects the submillimeter telescope array to be completed by FY 1996. The estimated cost of the submillimeter array has now been adjusted to reflect siting on Mauna Kea in Hawaii. This site is more expensive than one in the continental United States, leading to a revised estimate of \$40.3 million (1990). SAO had at first estimated the cost of placing the array in Hawaii to be about 25 percent greater, but by innovative designing SAO will be able to assemble much of the instrumentation in Cambridge, Massachusetts, and so limit the increase to 15 percent. Annual operating costs are expected to be about eight to ten percent of the construction costs. Almost all operating personnel will be hired during the design and construction phases of the project. They will thus already be included in the SAO base when operations commence.

SAO expects "first light" for the converted MMT by the end of 1994. SAO originally estimated that the total cost to the Smithsonian for the conversion would be no more than \$10 million (1987). Except for the effects of inflation, SAO's estimate is unchanged at \$10.8 million (1990).

For the first time under this line-item, the Smithsonian is requesting funding this year for a canopy access system for both the Smithsonian Tropical Research Institute and the Smithsonian Environmental Research Center. With funds requested in FY 1993, the Smithsonian will construct two custom-designed cranes, one for each location, to permit study of tropical and temperate forest canopies. The Smithsonian will seek funds in future years for the final payment for the cranes, for shipping and installation, and for the construction of two additional cranes.

EXPLANATION OF PROGRAM INCREASE - The FY 1993 request includes the following increases above the FY 1992 level: an increase of \$300,000 for the submillimeter telescope array (over the FY 1992 base of \$5,586,000), an increase of \$700,000 for the development of instrumentation for the converted MMT (over the FY 1992 base of \$119,000), and an increase of \$1,200,000 for the development of a canopy access system. These increases are offset by a reduction of \$100,000 in the funding required for the conversion of the MMT (from the FY 1992 base of \$2,414,000). In addition, the Institution asks for an increase in the funding for the personnel costs associated with the submillimeter telescope array and canopy access system as one-year funding in the SAO line-item and in the STRI and SERC line-items respectively. However, the justifications for those positions is included here because of their relationship to the Major Scientific Instrumentation request.

Construction of an Array of Submillimeter Wavelength Telescopes (\$300,000):

Scientific Justification - The last frontier for ground-based astronomy involves observing the skies with telescopes sensitive to submillimeter waves, light with wavelengths between those of infrared and radio waves. Only in the past few years has technology advanced sufficiently to allow the construction of telescopes that can observe the universe at submillimeter wavelengths. SAO's efforts to build a submillimeter wavelength telescope array will lead to fundamental contributions to astronomy and astrophysics in several areas:

(1) For studies of star formation, the array will be used to map the structure and motions of the disks that eventually contract into stars. The array offers the prospect of detecting and studying gas falling into very young stars and, thereby, of gaining detailed knowledge of how stars are formed. With unprecedented resolution and sensitivity, the array will also provide images of high-velocity gas flows from recently formed stars. These images will elucidate the mechanisms that limit the growth of a star and will help answer a fundamental question: Why is the sun the size it is?

(2) Use of the array will generate new information about galaxies. Detailed maps of the emission from carbon monoxide molecules will provide the first clear view of the spiral structure of galaxies outlined by giant molecular clouds. The array will also allow astrophysicists to study the emission from the dust surrounding young stars in galaxies. Study of these emissions will reveal centers of star formation not visible with optical telescopes. These two new views of galactic structure will expand understanding of the now-mysterious ways that spiral patterns in galaxies originate and sustain themselves.

(3) Because of its high sensitivity, the array will provide accurate measurements of the submillimeter wavelength emission from quasars and active nuclei of galaxies. These measurements will clarify the relationship between these enormously energetic objects and may reveal the source of their energy. These measurements also could be crucial to distinguishing between the mechanisms leading to quasars that emit radio waves and those that do not. An explanation for these mechanisms is one of the most important unsolved enigmas in the quest for understanding the source of energy in quasars.

(4) The array will give new information about the surfaces and atmospheres of planets and other objects in the solar system. Maps of Mercury, Mars, Saturn's rings, and some dozen additional bodies--asteroids and satellites--will reveal the temperature and structure immediately beneath the surface. This information is needed to understand the nature of the subsurface composition. New data gathered on emission from molecules in the atmospheres of Venus and Saturn's satellite Titan should also provide insight into planetary weather.

(5) Finally, the array is likely to make unexpected discoveries. Only a few telescopes will be able to work at submillimeter wavelengths. The array's ability to discriminate spatially will be at least ten times greater than that of any of these other, single, submillimeter telescopes. If the past is any guide, this unique capability should lead to important serendipitous discoveries.

In 1982, the ten-year plan of the Astronomy and Astrophysics Survey Committee of the National Research Council (NRC) recognized the desirability of submillimeter wavelength observations. Several single-antenna telescopes capable of such observations are now under

construction or in operation. These telescopes will dramatically advance the field. None of them, however, will be able to discern details finer than about ten seconds of arc. This limitation means that their resolving power will be less than one-tenth of the leading astronomical instruments in other wavelength regions, such as the Very Large Array (VLA) of radio telescopes.

The NRC study also recommended development of advanced spatial interferometers at all wavelengths to improve resolving power. SAO's submillimeter wavelength telescope array will be a premier response to the NRC's recommendation. It will have a resolving power of better than one second of arc, far finer than any single-antenna submillimeter wavelength telescope and comparable to that of the VLA.

In 1991, the ten-year plan of the Astronomy and Astrophysics Survey Committee of the NRC called the 1990s the Decade of the Infrared: "The infrared and submillimeter portion of the spectrum, from one micrometer to 1,000 micrometers, is poorly explored but is of fundamental importance for almost all aspects of astronomy, from solar system studies to cosmology." The Committee added that important new initiatives include the Smithsonian Institution's submillimeter array, which "will make subarcsecond images with high spectral resolution for the first time in this important wavelength band."

Status and FY 1993 Plans - Since beginning its submillimeter program in FY 1987, SAO has been assembling a team to develop the array and its associated high-frequency receivers. In FY 1987, a receiver scientist was hired and a receiver laboratory established. In FY 1989 and FY 1990, five key members of the array development staff were hired: the project scientist, the technical leader, the antenna leader, and the project director. The staff explored basic design options for the array, developed detailed plans, and investigated the atmospheric characteristics critical for the effective functioning of the array at two possible observing sites.

In January 1991, the preliminary design choices for the instrument and the site data were presented to the project's Scientific and Technical Advisory Group. The group, consisting of 15 internationally eminent members of the astronomical community, was created in 1989 to help guide the project during its multi-year development. The advisory group recommended that the array be located on Mauna Kea in Hawaii. The Smithsonian's Board of Regents approved this site and gave SAO permission to negotiate for a suitable area.

Following selection of the site, SAO recruited a site manager and several other positions needed to begin construction of the array. Ongoing activity concentrated on developing specifications for the antennas, so that these pacing items could be purchased in a timely manner. This design effort involved project scientists, knowledgeable vendors, and a world-respected designer of similar antennas. The antenna specification activities will culminate with a request for competitive bids in September 1991. Receiver development resulted in the completion of a state-of-the-art 230 GHz receiver, which will be delivered in fall 1991 to an existing Southern Hemisphere antenna for testing. The design study phase of the project is now essentially complete.

In FY 1992, SAO expects to begin construction of the major electronic systems associated with the antennas. These electronic systems will include the Phase I construction of the correlator, prototypes of the high-bandwidth data-transmission systems, and the first operational receivers. In addition, the team plans to complete planning and environmental impact assessment of the site in collaboration with the leaseholder, the

University of Hawaii. The other funds will be used to purchase the third and fourth antennas, for delivery in late FY 1994.

For FY 1993, the Institution requests a total of \$5,886,000 for the submillimeter array program. This funding represents an increase of \$300,000 from the expected FY 1992 base. Funds will be used to start construction of the last two antennas and to begin detailed architectural design of the site. The complete list of FY 1993 expenditures is as follows:

(\$ millions)

-- Acquire site and prepare construction camp.....	1.3
-- Contract A&E design for summit improvements.....	0.3
-- Contract for Phase II of correlator construction.....	1.0
-- Equip Massachusetts temporary site.....	0.2
-- Begin construction of operational receivers.....	1.0
-- Fund remaining two antennas	1.5
-- Acquire electronic equipment.....	0.5
-- Admin. expenses (travel, furniture, supplies, etc.).....	0.1

Total FY 1993 Costs	\$5.9
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The SAO line-item requests funding for the staff required for the submillimeter telescope array. With the funding increases requested for FY 1993, SAO will fill five new positions for the project (5 workyears and \$206,000) at Hilo, Hawaii, and rent space initially in Cambridge, Massachusetts, and then at the site (\$28,000). Personnel to be hired are two electronic technicians, one specializing in receivers and one in antennas; two mechanical technicians; and one general maintenance worker. The technicians will be temporarily based in Cambridge, Massachusetts, to help with the assembly of the instrument and to train for the maintenance of the equipment at the observing site on Mauna Kea.

Project Schedule - The multi-year construction schedule for the submillimeter array began following the design study phase in FY 1991 and is planned for completion in FY 1996. The following chart shows the total level of funding required for the project from FY 1989 through completion of the instrument on Mauna Kea in FY 1996, including allocations already made (actual for past years and 1990 dollars for present and future years). The increased total reflects the cost of siting the array on Mauna Kea rather than in the continental United States.

PAST AND PROJECTED FUNDING FOR THE SUBMILLIMETER TELESCOPE ARRAY
FY 1989 THROUGH FY 1996

(1990 dollars; actual where already spent)

	FTE	(\$ millions) ^{1,2}
FY 1989	3	0.8
FY 1990	6	1.6
FY 1991	12	3.9
FY 1992	23	7.0
FY 1993	28	7.5
FY 1994	34	7.5
FY 1995	34	7.0
FY 1996	34	5.0
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TOTAL	174 ³	\$40.3

¹Rounded to the nearest \$100,000.

²Includes all personnel costs.

³Represents cumulative workyear requirement over eight-year period.

Conclusion - When operational, the SAO submillimeter telescope array will be a major scientific instrument of international stature. The array will be unique in the world in its combination of wavelength coverage and resolving power. It will therefore measurably enhance the scientific competitiveness of the United States. With the recent unfortunate delay in acquiring high-resolution space-based observations, the recovery of momentum represented by the construction of technologically advanced, pioneering ground-based instruments such as the submillimeter array is especially timely.

Conversion of the Multiple Mirror Telescope (-\$100,000): In FY 1988, SAO began the process of converting the MMT to a telescope with a single 6.5-meter diameter mirror. This conversion will more than double the light-gathering power of the telescope and increase its field of view several hundredfold. The converted telescope will allow scientists to observe many objects simultaneously; for certain types of problems, the converted telescope will permit more than a hundredfold increase in efficiency of data collection over the MMT.

Scientific Justification - SAO scientists have played a leading role in mapping the distribution of galaxies in the local universe. They have discovered that galaxies are located on thin surfaces surrounding regions nearly devoid of galaxies, a structure reminiscent of soap bubbles. The converted MMT, equipped with appropriate instrumentation, will enable SAO scientists to answer questions raised by this startling finding from study of the relatively nearby parts of the universe: Is the distribution of galaxies we see locally characteristic of the universe as a whole? Do even larger patterns in the galaxy distribution emerge when more of the universe is observed? How has the galaxy distribution changed over cosmic time scales?

To answer these questions, the light from tens of thousands of remote galaxies must be analyzed. The converted MMT will have more than twice the collecting area of the existing telescope, but, even more important for this investigation (and many others), it will offer a field of view 300 times larger. More than 1,000 galaxies will be visible in

this expanded field at any one time. However, the simultaneous study of the properties of a large number of galaxies will only be possible if sophisticated new instruments are built (see below). These instruments will be capable of intercepting and analyzing simultaneously light from 300 galaxies or stars scattered anywhere over the large field of view.

The expanded capability of the converted telescope also will be especially beneficial for the study of clusters of stars and galaxies. SAO astronomers will be able to complete, in a few hours, projects that now require many nights. For example, SAO scientists will be able to conduct studies of the motions of clusters of stars that hold clues to their age and the age of our galaxy, an area of research in which SAO scientists have been among the world leaders. Similarly, the study of clusters of galaxies, hitherto prohibitively demanding of telescope time, will become feasible. Research on these clusters should yield the key to an understanding of the distribution of matter in the universe. This distribution has a fundamental bearing on the evolution of the universe, in particular on how galaxies formed--a question that has baffled scientists for decades.

In addition, it will be possible to measure the velocities of gas in very distant galaxies. Astronomers can then compare these velocities, which are often related to the intrinsic brightnesses of the galaxies, with the apparent brightnesses of the galaxies to determine their distances. This technique will allow scientists to determine the rate of expansion of the universe when it was younger. A measurement of this rate is critical for understanding the evolution and ultimate fate of the universe: Will it continue to expand forever, or will it eventually collapse?

The increased collecting area will allow pioneering studies of certain rapidly changing astrophysical phenomena. In such cases, changes occur too rapidly for astrophysicists to study them with any of today's telescopes. For example, some of these rapidly changing processes take place in double stars. The members of these stars are so close to each other that their surfaces almost touch. Scientists similarly can study phenomena in systems with one star whose core is so dense that not even light can escape from it--a black hole. Such systems give rise to very unusual conditions; their study would be possible with the converted telescope and permit insights into new physical processes.

These examples provide just a small sample of the scientific justifications for the conversion of the MMT. A conference held at SAO in April 1986 resulted in a 50-page proceedings that discusses in more detail the various reasons for the conversion.

Status and FY 1993 Plans - With funding provided for the conversion project in FY 1987 through FY 1992, SAO ordered, received, and tested the glass required for casting the 6.5-meter mirror in the University of Arizona's Mirror Laboratory; selected a consulting engineering firm and completed the conceptual and preliminary design for the building modifications, optical support structure, and primary mirror cell; and purchased the f/9 secondary mirror blank. As part of its contribution to this joint project, the University of Arizona's Mirror Laboratory enlarged the casting furnace and started construction of the mold to allow the 6.5-meter mirror to be cast. The Mirror Laboratory is now polishing a 3.5-meter diameter mirror to develop the techniques to be used on the 6.5-meter diameter mirror.

In FY 1992, the 6.5-meter diameter mirror will be cast. SAO will complete the detailed design and issue fabrication contracts for the building, optical support

structure, and primary mirror support. SAO will also order the blank for the f/5.2 secondary mirror.

For FY 1993, the Institution requests a total of \$2,314,000 to continue the conversion process. This funding represents a decrease of \$100,000 from the FY 1992 level of \$2,414,000. The main effort in FY 1993 will be to finish fabrication of the optics support structure and the primary mirror cell. The University of Arizona will begin polishing the 6.5-meter primary mirror.

Project Schedule - SAO expects "first light" for the converted MMT by the end of 1994 at a total cost to the Smithsonian of no more than \$10.8 million (1990). The exact cost of the conversion and the precise contribution of the University of Arizona are still not known, but \$10.8 million is believed to be a reliable upper figure for the Smithsonian Institution's contribution. This total includes amounts allocated in FY 1987 for the purchase of glass and refractories. The funding provided in FY 1988 was part of the one-year appropriation for SAO. Since FY 1989, the Smithsonian requested and received funding for the MMT conversion as no-year funding in this line-item. The breakdown of funds by year (actual for past years and 1990 dollars for present and future years) is shown in the following chart.

PAST AND PROJECTED FUNDING FOR CONVERSION OF THE
MULTIPLE MIRROR TELESCOPE
FY 1987 THROUGH FY 1994

(1990 dollars; actual where already spent)

(\$ millions)¹

FY 1987	0.5
FY 1988	0.5
FY 1989	0.6
FY 1990	0.9
FY 1991	2.0
FY 1992	2.4
FY 1993	2.3
FY 1994	1.6
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TOTAL	\$10.8

¹Rounded to the nearest \$100,000.

Conclusion - The conversion of the Multiple Mirror Telescope is the most cost-effective way to ensure that Smithsonian astronomers will remain in the forefront of ground-based optical and infrared astronomy through the remainder of the 20th century and beyond.

Instrumentation for the converted MMT (\$700,000) - Completion of the conversion of the MMT to use a single 6.5-meter mirror is anticipated in late 1994. SAO must now begin to build new instruments that will allow its scientists to use the MMT's new capabilities effectively. Development of a multi-object spectrograph has the highest priority. (The scientific justification for this instrument is discussed above.)

The multi-object spectrograph will use 300 optical fibers acting as "light-pipes" to guide the light from the focus of the telescope to the input of the spectrograph. A high-speed robot positioner will move the fibers to the appropriate positions at the telescope focus. A program of observing tens of thousands of galaxies, which would not be otherwise feasible can be carried out with ten to 20 nights of telescope time with this advanced instrument.

Scientists at SAO will also use the multi-object spectrograph for studies of clusters of galaxies and clusters of stars, for identification of sources discovered with x-ray astronomy satellites, and for determination of the orbits of material in large, nearby galaxies. In each case, the new instrument will give the converted MMT the power of several hundred telescopes with a conventional single-object spectrograph. Feasibility studies show that the technology is possible, but SAO must begin serious work on the spectrograph now if it is to be ready at the time the telescope is completed.

During FY 1992, SAO will carry out a series of measurements of the optical and mechanical properties of the fiber-optic probes, study the thermal and mechanical operating conditions of the instrument at the telescope, and develop a mechanism to pick up the fiber-optic probes. This work will allow SAO to develop complete specifications for the robot positioner. In addition, SAO will complete the optical design for the spectrograph that will analyze the light collected by the fiber-optic probes. With funds requested in FY 1993, SAO will procure the robot positioner and the optical components for the spectrograph and design the mechanical components for the spectrograph.

For FY 1993, the Institution requests a total of \$819,000 to develop and build new instruments for the converted MMT. This funding represents an increase of \$700,000 from the expected FY 1992 base.

Canopy Access System (\$1,200,000): Research of the upper canopy of the tropical forest has long been a priority and this proposed access system grows out of experimental studies at STRI and at SERC. A prototype canopy access system was installed in a forest near Panama City in 1990 using a small construction crane leased from a local contractor. Funding for the first year of the prototype study came from reallocation of STRI research funds. Studies continue with a small grant from the United Nations Environmental Program. Intensive measurements of canopy structure, climate and gas exchange have been completed, along with testing of available physiological and meteorological instruments and engineering studies of the crane itself. This information has provided valuable guidelines for the design of the permanent systems at STRI and SERC and associated instrumentation.

Scientific Justification - Because of the difficulty of access, observation, and experimentation within the tops of trees, understanding of the uppermost portion of the forest is far from adequate. The techniques currently available provide limited flexibility and maneuverability, little safety, and almost no access to the upper canopy. A canopy access system or sky laboratory, using commercially available construction cranes, specially adapted for biological research, will permit access to the top layer of the forest. This system will allow a range of scientific study and observation never before available. It also will provide unprecedented capability and versatility to STRI's and SERC's global biodiversity programs. Among the research contributions the canopy access system will make are:

(1) STRI and SERC's coordinated research programs will allow direct comparison of tropical and temperate forests with regard to important global change processes. The

research will include such varied items as chambers for maintaining altered atmospheric composition around tree branches, micrometeorological measuring of gas and particle exchange rates between the canopy and the overlying atmosphere, and detailed biological research on the plant canopy. This system will permit, for the first time, detailed study of gas-exchange processes in tropical and temperate forest canopies, one of the most important global interfaces between the biosphere and the atmosphere. This system will have a profound impact on understanding how to manage and conserve tropical and temperate forests and to predict the responses of these forests to changing environments. It will also make possible carefully replicated studies of forest tree adaptation to critical environmental factors such as drought stress and variation in light availability.

(2) Similarly, fundamental studies of canopy-dwelling animals will be possible, providing insights into the life history, behavior, and ecophysiology of important vertebrate and invertebrate groups. Scientists will also be able to more accurately document the activities of pathogens, herbivores, pollinators, and seed dispersers.

(3) In addition to permanent and visiting scientific staff, the programs at STRI and SERC support a vigorous education and fellowship program for undergraduate, graduate, postdoctoral, and senior postdoctoral students and researchers from both Third World and developed countries. All these researchers will benefit from this new research tool.

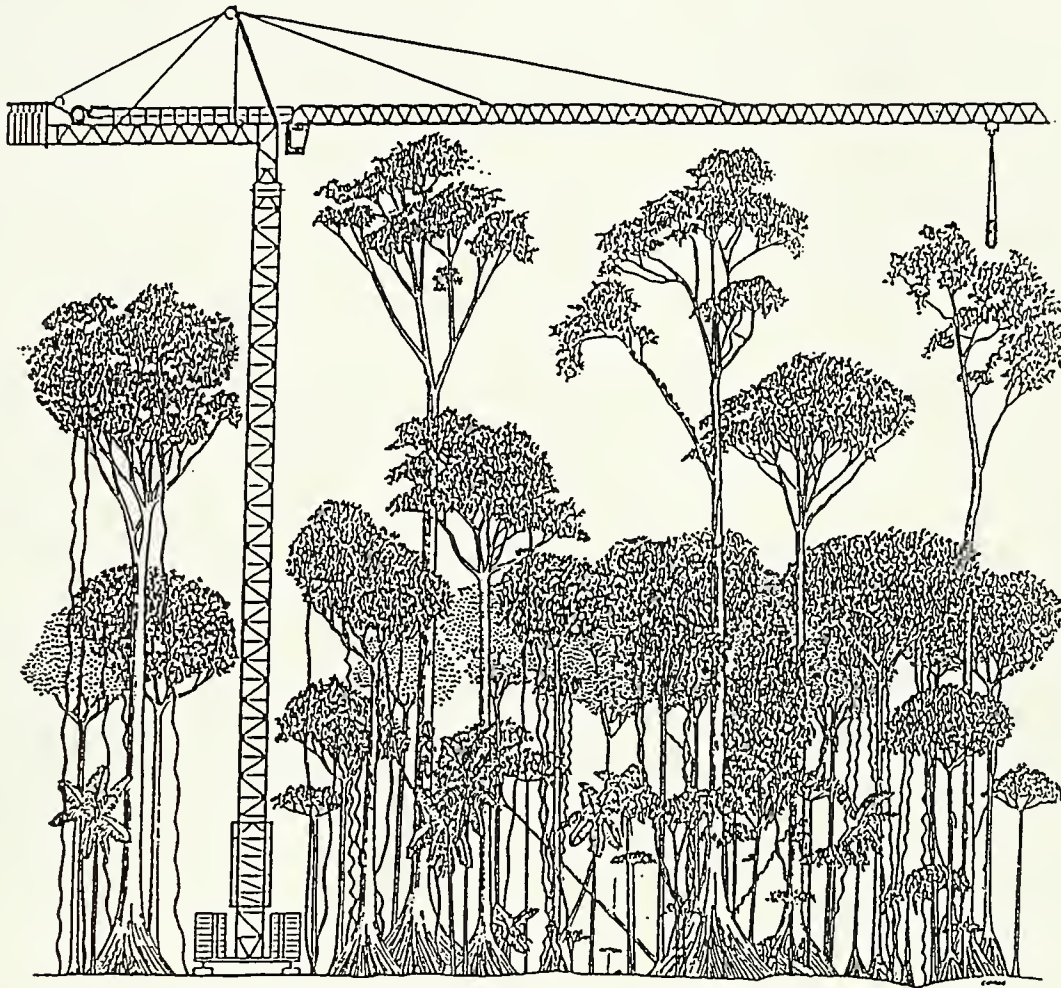
In sum, these cranes or sky laboratories and associated instrumentation will revolutionize the understanding of forest biology and will permit the development of rational forest management plans, especially for tropical forests in the face of accelerating deforestation and rapidly changing climatic conditions.

Status and FY 1993 Plans - STRI and SERC have been conducting research on atmosphere/forest interactions for several years. As a result of studies using a 160-foot-tall walk-up tower at SERC, scientists have characterized the surrounding mature deciduous hardwood forest both meteorologically and biologically. Moreover, SERC has five years of experience operating and developing air chambers for experiments on young forests and forest floor plants in mature forests. STRI's use of the prototype crane marks the first time in the history of biological research that a tower crane is being used to study the forest canopy. With a dedicated scientific staff and a base of more than 65 years of collected biological and environmental data, STRI is in a unique position to utilize this proposed canopy access system. Cranes at STRI and SERC will allow access for scientists and equipment to approximately five acres of canopy. Ultimately, STRI scientists plan to put two tower cranes on selected sites within the forest of Barro Colorado Island, and SERC will place two cranes at a location in the vicinity of its walk-up tower.

To provide direct access to the canopy, the scientist and experimental apparatus will ride within a custom designed gondola suspended from the hook of a tower crane. The horizontal jib of the cranes will move this research gondola with loads of up to a ton to any location above the canopy, then lower it to any depth in the canopy. The gondola will be positioned by remote control or by a crane operator responding to requests from the scientists. In this manner, a wide variety of scientists can conduct research day or night in various locations within the access zone.

Existing cranes designed for construction are unacceptable for research use without significant modifications. Standard cranes tall enough to extend above the forest canopy must be stabilized with cables that make the cranes susceptible to falling branches. Researchers, therefore, need to "overdesign" the crane structure to avoid the need for

cables. Occasional power failures at both STRI and SERC require the design of a manual mechanism for lowering of the research gondola.



Because standard construction gondolas are unsafe and inadequate for use by scientists, several alternative research gondolas will be designed. One set of very small gondolas will be designed for remote-controlled measurements of canopy microclimate and canopy gas composition. Larger gondolas will be designed for varying numbers of investigators and different instrument packages. The largest of these gondolas will serve as canopy laboratories, fully instrumented and computerized to permit full physiological and microclimatic analyses.

The canopy access system requires development of new instrumentation operated from gondolas, from the crane jib, and from packages placed in the canopy and serviced by the crane. A system for precise description of the location of the research gondolas is essential, so that the researcher can clearly specify and relocate study sites during the day or night.

Other examples of essential instrumentation are the development of computer-assisted video techniques to measure the structure and radiation environment of the canopy (STRI takes lead role); chambers for manipulation of atmospheric gases around tree branches (SERC takes lead role); and fully weatherproofed and automated packages of meteorological instruments for use in remote sensing of canopy conditions (STRI takes lead role). A multi-band spectral radiometer for ultraviolet, visible, and near-infrared light will be operated remotely from the gondola as well as on the jib to characterize sunlight penetration and reflectance of the forest canopy for analysis of canopy radiation exchange with the atmosphere. This scanner will also allow for detailed ground truthing of satellite data. SERC would take the lead role in this radiometer project.

STRI and SERC will collaborate in designing and building crane modifications and instrumentation. A joint committee of STRI and SERC staff will oversee the project, but each task will be assigned to one of the units for a lead role. The services of specialists will be contracted on a short-term basis.

For FY 1993, the Institution requests \$1,200,000 to begin modification and construction, including instrumentation design and fabrication, of two canopy access cranes, one for STRI and one for SERC. These cranes will be completed in FY 1994. Future requests will include, for FY 1994, \$1,340,000 for final payments for the cranes and for shipping and installation; for FY 1995, \$1,200,000 for the construction of two additional cranes, one for each site; and for FY 1996, \$1,215,000 to complete the project. The project will require funding for annual operating expenses for staff support, instrumentation development and refinement, and crane maintenance.

The STRI and SERC line-items request funding for the staff required for the canopy access system. STRI requests 4 workyears and \$320,000 to hire a canopy biologist and a research assistant to manage STRI's Canopy Biology Program and play a key role in the design of the permanent crane and instrumentation, making use of the prototype crane in the process (2 workyears and \$121,000), and two crane operators to replace the contract operators presently provided by the contractor who is leasing the prototype crane to STRI (2 workyears and \$77,000). Additional funds are requested to design and build specialized research instruments for canopy research and purchase supplies for the program (\$112,000) and pay for travel by the biologist to scientific meetings (\$10,000).

SERC requests 5 workyears and \$313,000 to hire a canopy biologist (1 workyear and \$72,000), a research assistant (1 workyear and \$35,000), a senior crane operator (1 workyear and \$36,000), a research site coordinator (1 workyear and \$29,000), and an assistant coordinator (1 workyear and \$21,000). The canopy biologist will plan and manage the crane modifications, instrumentation development, and overall research program development at the SERC site and will coordinate all efforts with STRI staff. The other four positions, needed in the fourth quarter of the year, will help plan the crane installation, carry out detailed site selection and characterization, and help develop specific plans. Lapse funds for these four positions will be used for short-term service contracts to design specific instrumentation, such as crane modifications, branch chambers, and spectral radiometers. Together, efforts from existing SERC staff, future new hires, and expertise acquired through short-term contracts will develop and test the new instrumentation. The request will also provide related support (\$120,000) for the new staff sought in FY 1993 and for existing scientific staff assigned to this program.

Project Schedule - Construction of the first two cranes will begin in FY 1993; they will be completed in FY 1994. In FY 1994, the Smithsonian will seek funds for the final

payment for the cranes and for shipping and installation. Funding sought in FY 1995 will support the construction of the second crane for each site, with construction expected to be completed in FY 1996. The following chart shows the total level of funding required for the project.

PROJECTED FUNDING FOR THE CANOPY ACCESS SYSTEM
FY 1993 THROUGH FY 1996
 (1991 Dollars)

	FTE	(\$ millions) ^{1,2}
FY 1993	9	1.8
FY 1994	13	2.0
FY 1995	17	2.0
FY 1996	17	2.0
<hr/>		
TOTAL	56 ³	\$7.8

¹Rounded to the nearest \$100,000.

²Includes all personnel costs.

³Represents cumulative workyear requirements over four-year period.

Conclusion - Biologists know little about the forest canopy because no safe, efficient technique exists for reaching this layer of the forest. The study of the forest canopy made possible by modified construction tower cranes will lead to an explosion of knowledge about the diversity and abundance of forest species and their interactions and will vastly improve estimates of global biodiversity and management of tropical forests in the face of accelerating deforestation and global climatic change.

MUSEUMS

OFFICE OF THE ASSISTANT SECRETARY FOR MUSEUMS

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	29	1,731	8	582	-	8	-	107	-	-
FY 1992 Estimate	31	1,940	9	651	-	44	-	250	-	-
FY 1993 Estimate	41	3,106	9	651	-	40	-	98	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Office of the Assistant Secretary for Museums (OASM) offers oversight to 12 museums and six major bureaus. It manages essential museum functions, including collections management, exhibitions, education, public orientation, and operations. OASM acts as a liaison with other museums and public institutions worldwide to fulfill the Smithsonian's obligation as the Nation's museum. This role affords OASM unique opportunities to coordinate exhibition and attendant-interpretive programs that coincide with the Smithsonian's comparative advantage as a national public forum; to promote collaborations between the Institution's educational resources and the Nation's educational institutions; and to improve dissemination of information to the public to stimulate greater appreciation for and understanding of the Nation's heritage. This line-item includes the Office of Museum Programs (OMP), which provides training and research services to the museum profession worldwide, and the Office of the Registrar (OR), which develops, oversees, and coordinates Smithsonian collections management policies to preserve and improve access to the National Collections and assure their continued availability to present and future generations.

For FY 1993, OASM requests an increase of 8 workyears and \$1,071,000 to provide African-American programming on the Mall (7 workyears and \$910,000); to establish a Museum Career Information Center (1 workyear and \$100,000); and to support training in the Accessibility Program (\$61,000). OMP seeks an increase of 2 workyears and \$95,000 to establish an Intern Development Program (1 workyear and \$45,000) and enhance Smithsonian staff training (1 workyear and \$50,000).

PROGRAM:

I. Office of the Assistant Secretary for Museums - OASM works closely with museums, educators, and specialized committees to improve outreach programs, serve broader audiences, and plan new museum initiatives. OASM encourages the development of new techniques in exhibitions, programming, and museum administration and supports multi-cultural programming throughout the Smithsonian Institution.

African-American Institutional Study Program - During FY 1990, the Smithsonian Institution convened an Advisory Committee to determine the type of entity needed for interpreting African-American history and culture; possibilities for collaborations with existing cultural institutions, both within and outside the Institution; and the appropriate organizational structure for pursuing scholarship in African-American material culture, an underfunded and inadequately researched area. In FY 1991, the Smithsonian's Board of Regents supported, in principle, the Advisory Committee's recommendation that there be a freestanding African-American museum on the Mall, with the caveat that collections need to be identified. The staff is presently engaged in collections identification, community education, and program planning.

The Smithsonian Special Exhibition Fund Program - In 1984, the Board of Regents established the Special Exhibition Fund to supplement Federal appropriations for exhibitions resulting from scholarly research in various scientific, humanistic, aesthetic, technical, or interdisciplinary fields represented throughout the Institution. The increasing diversity of the visiting public led to the encouragement of exhibitions that appeal to the broadest possible audience. In FY 1991, the Program supported 28 exhibitions in art, history, and science. Notable among these were an exhibition of drawings by Silverhorn, which contributed to the Smithsonian's efforts in circulating Native-American material; an exhibition on the experiences of four generations of Japanese-American women; and a hands-on exhibition, "Principles of Flight."

The Collections Acquisition Program - In January 1978, the Board of Regents established an acquisitions program enabling the Smithsonian's museums to purchase major works that would add significantly to the quality and comprehensiveness of the National Collections. The Program, funded by unrestricted Trust funds, was created to supplement Federal acquisition monies, which were insufficient for the museums to purchase important, but expensive, works of art on the open market. Recent museum acquisitions have represented diverse cultural perspectives, such as acquisition of a collection of 21 pen-and-ink and watercolor drawings by the Cheyenne artist Tichkematse (Squint Eye) and additional Duke Ellington archival material from his sister, Ruth Ellington.

II. Office of Museum Programs - OMP serves both national and international museums and communities by providing training courses, reference services in contemporary museum practice, counseling, and career-development programs. In FY 1991, OMP provided training courses to more than 275 museum personnel from the United States and abroad. Of particular significance was the inauguration of training on cultural-resource management, a series of six courses offered over a two-year cycle to Native-American tribal communities. In FY 1990, OMP offered referral, registration, counseling, and career-development programs to more than 650 interns. This number represents a 40 percent increase over the previous five years. Also in FY 1990 and FY 1991, OMP experimented with developing training materials that might allow for broader dissemination of its programs. Two projects are especially significant: planning and proposal development of a film project on "ecomuseums," an alternative model of museum and community collaboration in cultural management, and the spring 1992 publication of Conversations on Learning, lectures from a course on education theory and exhibition development, a joint project with the American Association of Museums.

III. Office of the Registrar - OR permits diverse audiences access to the National Collections while designing systems to keep the collections safe. The Office supervises the management of 137 million objects and specimens and designs inventory and internal

control procedures that provide accountability for Smithsonian collections. During FY 1990, OR reissued the Institution's collections-management policy directive, Office Memorandum 808. The Anacostia Museum, National Air and Space Museum, and National Museum of American History are presently reviewing their individual collections-policy statements. To ensure accountability, OR introduced a unique Statistical Sampling Plan (SSP) for collections inventory purposes.

Researchers and the public may gain access to the National Collections through the Collections Information System (CIS). In FY 1990, CIS's data base systems were activated at the National Air and Space Museum, the National Museum of American Art, and the Departments of Anthropology and Botany at the National Museum of Natural History.

As the leading participant in the International Council of Museums Documentation Committee, OR assists in mapping the development of collections-automation systems worldwide. During FY 1990, OR coordinated a collaborative program between the Smithsonian and the Museo de la Nacion in Lima, Peru, which involved the exchange of museum personnel and the sharing of collections management and conservation techniques.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, OASM requests an increase of 8 workyears and \$1,071,000 to provide African-American programming on the Mall (7 workyears and \$910,000); to establish a Museum Career Information Center (1 workyear and \$100,000); and to support training in the Accessibility Program (\$61,000). OMP seeks an increase of 2 workyears and \$95,000 to establish an Intern Development Program (1 workyear and \$45,000) and enhance Smithsonian staff training (1 workyear and \$50,000).

I. Office of the Assistant Secretary for Museums:

African-American Programming on the Mall (7 workyears and \$910,000) - Establishing a separate museum devoted to collecting, analyzing, researching, and organizing exhibitions on African Americans on a scale comparable to other major museums devoted to varied aspects of American life will change public perceptions and dispel stereotypes about African Americans.

In keeping with the Advisory Committee's recommendations that collections identification precede plans for a freestanding African-American museum on the Mall, task forces, consisting of scholars from both within and outside the Institution, will work toward clarifying the programmatic needs of a new museum. The task forces will examine such issues as research, collections, development and marketing, administration, and facilities planning. A committee in each area will consist of approximately six individuals who will meet four to six times during the fiscal year, depending upon the complexity of the issues. Their suggestions will be incorporated into a program and staffing plan, which will lay the foundation for the facilities planning outlined under the Repair and Restoration section of this budget.

The requested resources will enable the Institution to hire administrative and support staff (7 workyears and \$413,000) to follow up on areas identified through the task force process. Among the key positions to be filled are a deputy director for planning and administration; a task-force coordinator to facilitate communications among the task forces and compile recommendations; a research historian with responsibility for identifying collections available through donation or purchase; and a registrar to develop a collections-management policy. Other early hires may include development staff to identify potential donors and fund-raising sources, and other administrative staff to oversee

facilities planning, personnel, budget, and financial administration. Also, OASM requests funds (\$497,000) for contractual services, travel, communications, printing, supplies, materials, equipment, and acquisitions.

Historically, public and government resources for museum exhibitions and programming have not adequately represented the achievements of all Americans. As the United States National Museum, the Institution is pledged to collect, preserve, research, and exhibit historical and cultural material reflecting the full diversity of American people.

Museum Career Information Center (1 workyear and \$100,000) - The Museum Career Information Center will provide information concerning museum careers and training opportunities for positions in a variety of disciplines throughout the museum world. The intended clientele for this Center will be students, women, minorities, disabled individuals, and museum workers, as well as high school and university career counselors and those wishing a career change.

The Center will coordinate Smithsonian-sponsored conferences on museological concerns with a national and international focus. It will publish books and guides on educational prerequisites, on-the-job skills requirements, ethics and legalities, professional development, accessibility for the disabled, and other essential matters indicative of the higher standards and complexities within positions now required of museum staff.

OASM requests funds to support a program manager (1 workyear and \$83,000) to administer the Museum Career Information Center, disseminate information presented at the conferences, and educate Smithsonian staff on new approaches and techniques, enabling national and international participation in Smithsonian activities. OASM requests an additional \$17,000 to fund equipment and travel.

Creation of a Museum Career Information Center offers a unique opportunity for a diverse national audience to increase its knowledge of and exposure to museum work. The Center will have a profound impact on the future of museum professions by creating a central source, unlike any other in the United States, of comprehensive museum career information.

Training for the Accessibility Program (\$61,000) - Coordinating and administering the Smithsonian's Accessibility Program requires training Smithsonian staff to comply with Federal laws--particularly the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990--that mandate programmatic and facility accessibility for people with disabilities. In meeting this challenge, OASM accommodates disabled visitors and staff by making its collections accessible to a diverse public.

OASM will centrally administer resources to train staff and volunteers; offer services to the disabled visiting public; fund specialized equipment purchases; and establish two advisory councils, one composed of local professionals with disabilities to advise on various accessibility issues and one composed of disabled national figures who will participate in programs presented to the Smithsonian's staff. In addition, OASM plans to work with outside organizations such as the Architectural and Transportation Barriers Compliance Board and other museums to remove existing barriers and prevent the creation of future ones.

The requested resources will provide the following services to staff and the visiting public: sign language, oral and cued speech interpreters, readers, audiocassettes, large-

print materials, pictorial information materials, sign language courses, and the purchase of specialized equipment for the physically disabled.

Centralizing the Accessibility Program enables the Smithsonian Institution to provide better service to visitors and staff and ensure that the Smithsonian meets Federal mandates.

II. Office of Museum Programs:

Intern Development Program (1 workyear and \$45,000) - A Smithsonian internship is an important, practical supplement to academic training. Interns work in close, tutorial relationships with Smithsonian staff. They conduct scholarly research, develop educational programs and exhibitions, and care for, catalogue, and manage museum collections. The Intern Development Program will diversify the internship pool and ensure Smithsonian interns develop the skills they need to pursue museum careers by introducing them to the role and purpose of museums and providing them with hands-on training resources in culture, education, and the arts.

The requested resources will support an intern program coordinator (1 workyear and \$35,000), who will plan and implement the Smithsonian's Intern Development Program. Additional funds (\$10,000) will be used for educational program materials and supplies, such as books, article reprints, and films.

The Smithsonian Institution plays a key role in the development of new museum professionals by introducing students to museum work with the practical hands-on experience of internships. With the funds requested, the Intern Development Program will make sure Smithsonian internships are as wide-ranging and effective as possible.

Smithsonian Staff Training (1 workyear and \$50,000) - To provide exemplary service to the public, the Smithsonian needs to invest continually in staff training. Rapidly changing technologies and a mandate to serve new audiences challenge staff to expand their skills. Through this program, staff members will strengthen their technical and professional skills in a range of areas, including exhibition planning, educational program management, and collections management and care.

OMP will develop, implement, and evaluate training courses for Smithsonian staff on museum topics. Drawing on a national faculty of leaders in museums and allied fields, OMP will also develop courses on collections development, collections management, educational programming, and exhibition development.

The requested resources will support a program coordinator (1 workyear and \$35,000) who will oversee the development and implementation of the training programs. An additional \$15,000 will provide faculty honoraria and travel expenses, and curriculum materials.

The Smithsonian museums must keep pace with visitor and professional expectations of excellence in museum practice. Forums that provide staff with the latest innovations in museum work help the Smithsonian improve services to visitors and function as an example to other museums nationally.

NONAPPROPRIATED SOURCES OF FUNDING:

I. Office of the Assistant Secretary for Museums:

Unrestricted General and Special Purpose Funds - These funds support the salary, benefits, and expenses of the Assistant Secretary, special assistant and museum program specialist. In addition, transfers of unrestricted funds support the Collections Acquisition Program, which facilitates the Smithsonian's purchase of major acquisitions, and the Special Exhibition Fund, which provides partial funding through a competitive process for important and innovative exhibitions throughout the Institution.

Restricted Funds - In FY 1991, the Office of the Assistant Secretary for Museums received a grant of \$150,000 from the American Psychological Association to continue development of an Experimental Gallery.

II. Office of Museum Programs:

Unrestricted General and Special Purpose Funds - OMP receives an annual allotment to support travel and subsistence expenses of minority professionals attending OMP seminars. OMP has two revolving Trust funds: one for training tuition and one for an audio-visual loan and sales program, the proceeds of which offset expenses and fees. In addition, OMP has one Trust fund to support intern registration and administrative services.

III. Office of the Registrar:

Unrestricted General and Special Purpose Funds - The Office of the Registrar receives an annual allotment to fund salary and support costs for the administrator of the Collections Information System.

NATIONAL MUSEUM OF NATURAL HISTORY/MUSEUM OF MAN

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	614	30,784	4	390	-	775	-	10,395	18	853
FY 1992 Estimate	624	33,844	4	449	4	910	-	4,139	17	778
FY 1993 Estimate	664	41,034	4	449	4	843	-	3,117	17	780

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The National Museum of Natural History/Museum of Man (NMNH/MOM) is the largest research organization in the Smithsonian complex. Studies carried out by the Museum's staff, and by scientists worldwide using its collections, increase understanding of the diversity, abundance, and evolutionary relationships of plants and animals living today and in earlier periods and shed light on the great physical changes that take place on this planet through time. Studies of different cultures enhance knowledge of cultural history and human adaptation to the environment, while research on human biological variation and evolution helps to uncover the history of humankind from paleolithic times to the present. Through its many exhibits, educational programs, and scholarly and popular publications, NMNH/MOM disseminates knowledge about the natural and cultural diversity of the world. The Museum recognizes that, with more than six million visitors each year, it has a unique opportunity and responsibility for improving scientific literacy, and it is committed to presenting the best current scientific thinking in a stimulating environment. The Museum houses the world's largest and most valuable assemblage of natural history specimens and cultural artifacts. It acquires, preserves, cares for, studies, and interprets these vast collections and makes them accessible as an indispensable resource to the scientific community and the public.

For FY 1993, NMNH requests 40 workyears and \$7,190,000 for the Global Change in Earth History Program (3 workyears and \$500,000); the Global Change/Biodiversity Program (3 workyears and \$400,000); study of cultural identity and diversity in Africa (3 workyears and \$300,000); a special assistant for multi-cultural affairs (1 workyear and \$91,000); the Collections Information System/Computer Communications Network (4 workyears and \$2,800,000); support funding for the East Court (10 workyears and \$637,000), safety and facility management (6 workyears and \$666,000), staffing and support for the evolutionary systematics greenhouse facility (3 workyears and \$215,000); exhibit hall restoration (\$800,000); the Natural History Intern Program (1 workyear and \$126,000); collection equipment and supplies (\$200,000); the Conservation Training Program (2 workyears and \$125,000); the Development Office (4 workyears and \$280,000); and an Arctic research vessel (\$50,000).

PROGRAM:

Research - The National Museum of Natural History is by far the largest scientific institute of the Smithsonian, with 131 staff scientists conducting more than 200 major research projects throughout the world. Many of the projects emphasize research that will contribute to an understanding of global environmental change.

Because of continuing base erosion, however, the Museum has been unable to fill all authorized positions and has had to reduce nonsalary support for research and other Museum operations to remain within appropriated funding levels. Since almost 70 percent of the total NMNH staff is assigned to perform research and related functions, the impact is greatest in this area. The Institution is requesting funds for base erosion for NMNH and justifies this request in the Uncontrollables section of this budget.

Current research initiatives include:

- To focus and strengthen the research, training, and public outreach, scientists of the Museum's biological diversity programs in Belize, Bolivia, Brazil, Guyana, and Peru have combined forces under a coordinated Biodiversity Program with strong linkages to biodiversity research at other Smithsonian bureaus.
- Museum anthropologists and paleobiologists involved in the Evolution of Terrestrial Ecosystems Program are conducting pioneering studies on the history of global ecological change. In early 1992, Terrestrial Ecosystems through Time, a landmark study of ecological change in the fossil record, will be published by the University of Chicago Press.
- Through the work of a Museum archeobiologist, seeds preserved in rock-shelters and river valley settlements of ancient Native-American farmers have provided the first evidence that eastern North America was an independent center of prehistoric plant domestication.

Briefings and Workshops - "Focus on Biodiversity," a series of short talks by six Museum researchers, provided a timely look at the ongoing research in this area at the Museum. This public briefing was presented in May 1991 in conjunction with the annual meeting of the Museum's National Council.

"Teaching about Native Americans," an innovative symposium on current approaches organized by the Museum's Department of Anthropology and Office of Education, drew 86 teachers from the Washington, D.C., area.

Research Publications - The Museum staff produced 598 publications in FY 1990. Among the major findings announced in 1991 are a previously unknown species of beaked whale, the first new cetacean identified since 1963, and 32 extinct species of birds that once lived in Hawaii.

An estimated 75 percent of the world's volcanic activity takes place in the ocean. In a July 1991 cover story in the prestigious journal Science, a Museum researcher and a university colleague jointly published a landmark study of little-known, explosive, undersea volcanoes of the Mount Saint Helens type.

Collections - The Museum has more than 120 million specimens of plants, animals, fossils, rocks, minerals, and human artifacts, and more than a half million are added yearly. Among the notable FY 1991 acquisitions are the fossilized thigh bone of a 110-million-year-old adult sauropod--the largest dinosaur bone ever found in the northeastern United States. The collections provide fundamental documentation for the study of humankind, flora and fauna, and the geology of our planet and outer space.

In FY 1991, the Museum initiated a program to modernize its Collections Information System (CIS). The multi-year effort will upgrade information management capabilities for collection maintenance and research. As a first step, an architecture has been defined that is more cost efficient and capable of being scaled to the task.

The Museum has officially adopted a policy on the treatment of sacred objects and cultural patrimony of Native Americans that adheres to Public Law 101-601. It is also moving to repatriate human remains and associated funerary materials, as mandated by Congress. In FY 1991, the Museum returned to the Island of Kauai, Hawaii, the remains of 132 individuals; to Kodiak Island, Alaska, 756 sets of human remains; and to the Sisseton-Wahepton Sioux, in South Dakota, 27 sets of human remains.

Public Programs - The Museum anticipates more than six million people will visit the Museum in 1991, continuing to make it the most heavily visited natural history museum in the world. Highlights of 1991-92 include:

"Beyond the Java Sea: Art of Indonesia's Outer Islands," the first major exhibition of the masterworks created by the peoples of Indonesia's outer islands, opened at the Museum to critical acclaim in April 1991. Organized by the Museum, the exhibition represented a survey and synthesis of the cultural life and thought of the more than 300 ethnic groups living on the thousands of islands of Indonesia. Special activities presented in conjunction with the exhibition included a film festival, native crafts demonstrations, and traditional dance performances. The events were part of the 18-month Festival of Indonesia in the United States.

In October 1991, the Museum will open "Seeds of Change," its largest special exhibition ever, commemorating the 500 years of cultural and biological exchanges since the voyages of Christopher Columbus to the Americas. The most comprehensive of the Smithsonian's Quincentenary programs, it will examine the worldwide impact since 1492 of five agents (seeds) of change: sugarcane, corn, potato, disease, and the horse.

In conjunction with "Seeds of Change," "The All-American Horse: Paintings of G. Harvey," an exhibition of the work of one of the most noted contemporary artists of the American West, will open at the Museum in December 1991. The paintings in the show will span 500 years of history and depict the use of horses in the conquest and settlement of this country and their role today.

For the second year, the Museum's Office of Education conducted a Natural Science Institute for Teachers of Minority Students, featuring activities for grades 4-12 aimed at learning how to "read" natural history. A companion institute was established in 1991 to increase the skill and interest of teachers and students in geology. The Museum inaugurated a Native-American Artist-in-Residence Program. Don Tenoso, a Hunkpapa Indian who demonstrates puppetry and doll making, was a guest of the Museum for two months, giving weekend crafts demonstrations in the Native-American Hall and visiting Washington area schools to meet with Native-American students.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, NMNH requests 40 workyears and \$7,190,000 for the Global Change in Earth History Program (3 workyears and \$500,000); the Biodiversity Program (3 workyears and \$400,000); study of cultural identity and diversity in Africa (3 workyears and \$300,000); a special assistant for multi-cultural affairs (1 workyear and \$91,000); the Collections Information System/Computer Communications Network (4 workyears and \$2,800,000); support funding for the East Court (10 workyears and \$637,000); safety and facility management (6 workyears and \$666,000); staffing and support for the evolutionary systematics greenhouse facility (3 workyears and \$215,000); exhibit hall restoration (\$800,000); the Natural History Intern Program (1 workyear and \$126,000); collection equipment and supplies (\$200,000); the Conservation Training Program (2 workyears and \$125,000); the Development Office (4 workyears and \$280,000); and an Arctic research vessel (\$50,000).

Global Change in Earth History Program (3 workyears and \$500,000) - World ecosystems are facing radical changes in plant and animal diversity and food-web structure. The fossil record shows how past ecosystems have responded to major and minor environmental perturbations. Research in paleoecology provides an essential historical perspective on ecosystem breakdown and change during major environmental shifts. Paleoecological evidence also shows which organisms survive and which become extinct under different types of environmental stress.

The Global Change in Earth History research program focuses on the long history of change in continental, marine, and island ecosystems. The objective of the 11 scientists involved in this program is to show the biological impact of past environmental crises. Paleoecological investigations provide crucial baseline data necessary to test models of present and future ecological change. The program has produced a major book on terrestrial ecosystems through time. Research continues to define processes of change in ancient land ecosystems, compile information on loss of diversity in island faunas using paleontological data, investigate climatic and biological effects of major changes in oceanic circulation, and examine major extinctions and radiations of plants and animals in relation to climatic change.

The requested funding will support three positions (3 workyears and \$100,000). A program administrator/data entry specialist will provide essential support services for the program as a whole, and two technicians will enhance the research of individual scientists. Funding will allow significant increases in field research in North America, the South Atlantic, Africa, the Mediterranean, southern Asia, and other areas (\$92,000). Funds will also enhance data acquisition and analysis through equipment purchases (\$104,000) and contracts and other services (\$179,000) and will cover necessary operating expenses, such as supplies, rent, communications, and printing (\$25,000).

The Global Change in Earth History Program directly addresses objectives of the U.S. Global Change Research Program to increase understanding of the environmental and biological processes that control ecosystem structure and biotic diversity. It utilizes unique information from the geological record to test models for regional and global ecological change. The program is designed to answer fundamental questions regarding the ecological effects of major environmental crises over long and short intervals of time, on regional and global scales.

Global Change/Biodiversity Program (3 workyears and \$400,000) - The loss of biodiversity throughout the world is a threat to all humankind. Efforts to mitigate the impact of environmental changes cause such loss cannot be effective without scientific

data. The NMNH Biodiversity Program (BDP), established in FY 1991, is designed to document tropical ecosystems and develop useful predictive models. These models will link changes to biodiversity, human practices, and environmental change and provide the tools for protecting the diversity of the world's flora and fauna.

Through on-site, well-equipped field stations in Belize, Bolivia, Brazil, Guyana, and Peru, the various programs within BDP document and monitor the biodiversity, structure, growth, and regeneration of tropical ecosystems. Hundreds of scientists collect specimens and data in the most remote locations in these countries. International experts identify specimens that add to the world's resource base. The program fosters the exchange of specimens, data, and intellectual goals that are shaping the way we see environmental change. A new workshop series will define the methods by which biodiversity is measured by scientists around the world. Each program element conducts public outreach and education at a variety of scholastic levels in-country and at NMNH.

Funds are requested to support two contract biologists for the Biodiversity of the Guyanas Program (\$60,000); weather monitoring support for the Caribbean Coral Reef Ecosystem Program (\$50,000); support for the Biological Dynamics of Forest Fragments projects (\$160,000) to offset the loss of World Wildlife Fund support effective June 30, 1992; and salary costs for the Biodiversity in Tropical Latin America Program, including a site manager for the Peru field station, a secretary, and a workshop coordinator (3 workyears and \$80,000). Support is also sought for the research and training workshop series (\$40,000) and for a public information hotline (\$10,000).

Historical efforts to document the world's vanishing species have been too slow. This failing, combined with past mistakes and the increased destruction of major ecosystems, has left humankind with little time to provide for a global future. BDP is poised to gather and synthesize the needed data, foster international research efforts, and develop answers for maintaining the diversity of species and the health of the planet.

Cultural Identity and Diversity in Africa (3 workyears and \$300,000) - A large number of Americans, even those of African-American descent, knows virtually nothing about African peoples, their cultures, and their nations. What little is known is usually perceived through the romantic haze of colonial imagery as typically presented in popular movies. The real Africa is a complex place, composed of peoples who have an ancient history, speak many languages, and manage a difficult present and future. African peoples on the continent and in their worldwide Diaspora have always considered themselves to share a history and an identity. Yet this shared history and identity take many forms and respond to changing circumstances.

The program of study draws together existing Smithsonian research on cultural identity, knowledge, and social change in western Kenya and research on art, society, and the creation of national culture in Mali. It will provide case studies of how Africans use their cultural resources to fashion diverse identities in the contemporary world. Smithsonian researchers and African collaborators will present their findings in the United States and Africa in both popular and scholarly forums, such as monographs and exhibits.

The program calls for additional funding in each of the next three years. The second year will begin a unique Smithsonian collaboration between NMNH anthropologists and staff involved in the development of the new National African American Museum. The project's African scholars will suggest ways to bring an African presence into the two museums and their exhibits. This part of the program also examines how cultural institutions such as

museums and popular media have represented African and African-American cultures. In subsequent years, studies will include systematic research on the history of health and disease in Africa and its Diaspora. No other program examines the history of major causes of multiple illnesses in the same environments. The program's combined natural and social science perspectives will develop models to explain factors influencing the spread of these diseases and consider how medical perspectives can be communicated to the people most affected by disease. The goal is that after five years, the Cultural Diversity in Africa and Its Diaspora Program will have added ten staff, five in the African American Museum and five in the Museum of Natural History.

The request for 3 workyears and \$300,000 will support the first phase of the program. Funding is required for field research support for staff and field assistants in Kenya, Mali, and the African Diaspora (\$85,000); one research assistant for each of the three geographical areas (3 workyears and \$105,000); contract personnel in Kenya and Mali (\$60,000); and an annual workshop (\$50,000). The annual workshop will convene Smithsonian researchers and their African and Diaspora partners; senior American, African, and Diaspora scholars working on these topics will also attend. By coordinating research planning, the workshop enables project members to combine multiple perspectives in their research design.

The Smithsonian Institution proposes that this interdisciplinary program examine African history, identity, and current problems from the dual vantage points of the continent and the Diaspora. These studies will develop the first full-time, systematic, collaborative research program of African, African Diaspora, and American scholars.

Special Assistant for Multi-Cultural Affairs (1 workyear and \$91,000) - NMNH wishes to establish a position at the Executive Staff level to provide daily input to all policy, staffing, and programming decisions from a multi-cultural perspective as well as to facilitate the activities of the Museum's new National Council.

While NMNH continues to address matters of cultural equity and pluralism in all staffing decisions and in public programming, the Museum does not have a minority member on the Executive Staff and does not have any vacant senior positions. A senior-level minority person on the management team will work closely with the scientific and administrative staff to attract minority scientists to the Museum and help to increase the pool of minority scientists, through active participation in outreach activities and intern programs and by providing input to potential upward-mobility tracks for current staff.

Another major responsibility of this position will be to coordinate the activities of the new advisory National Council, established in 1990. The Council is made up of seven senior scientists from throughout the United States and 25 leaders from the American business community. Meetings of the full Council are held biannually, and special meetings are called by the Council committees. The incumbent will work with the Council chairs to prepare agendas and keep track of Council actions and activities and coordinate with NMNH staff the programmatic and logistical aspects of the Council's work.

NMNH requests a special assistant for multi-cultural affairs (1 workyear and \$72,000) and funds for equipment and furnishings (\$14,000). A fund for travel (\$5,000) will enable the incumbent and other appropriate staff to attend out-of-town Council meetings and to visit minority colleges and universities and attend scientific meetings, as well as to participate in other outreach activities toward the special goal of increasing minorities in the sciences.

The proposed new special assistant, as a member of the Director's Executive Committee, will play a crucial role in the day-to-day work of the Museum's executive management, particularly in helping to guide the Museum's efforts to seek more external advice from the business and scholarly worlds and to broaden minority participation on all fronts, especially on the permanent scientific and management staffs.

Collections Information System/Computer Communications Network (4 workyears and \$2,800,000) - The Museum administers the National Collections and their associated data for the benefit of the public and researchers worldwide. In 1990, more than 700,000 collection items were involved in transactions, as loans, exchanges, or acquisitions, mostly related to the growing number of biodiversity and global environmental change studies. Present NMNH collections provide the largest existing specimen data base for such studies. Modernization of the Collections Information System is essential to manage the growing collection and data requests. The program will result in a comprehensive computer data base of information vital to the understanding of biodiversity and global environmental change. Collection data will thereby be made more accessible to the broad scientific and science educator community. The system will also provide improved transaction management, capable of meeting the large number of requests for items from the collections.

With this funding, the Museum will begin installation of the Collections Information System in a new architecture designed to provide cost-effective incremental growth. The new hardware, software, and communications architecture will correct serious problems and inadequacies of the Institution's outdated systems. It will ensure adequate response times to queries and enable integration over time of new technologies such as geographical information systems. It will support networking through telecommunications among both internal and external researchers and educational organizations. Functionally, the new architecture will enable the collection-management and research modules to be better integrated, meeting the dual needs for collection accountability and accessibility for research and education.

The amount requested has two components. The first will enable the Museum to begin installation of production applications in the scientific and collection-management support units of the Museum. A prototype of the transaction management module of this system is currently being assembled and tested in preparation for installation. Funding of the second component will enable the Museum to initiate the installation of its Computer Communications Network. Included are a network backbone, critical to providing reliable, secure, and high-speed access to collection data, and the departmental or local-area networks. This communications artery within the Natural History Building will link with networks elsewhere in the Smithsonian and with national and international networks.

Specifically, funding will enable the Museum to obtain contractual support for installation, staff training, migration from outdated systems, and maintenance (\$1,500,000); hardware, software, and supplies for the first installations (\$1,060,000); and four permanent staff (4 workyears and \$240,000). Two programmer analysts will support applications software development and maintenance; one user-services coordinator will troubleshoot, locating and resolving for the user a range of possible system problems; and one network administrator will manage the communications network. Due to the complexity of the contracting requirements for this project and the need to coordinate network installations with other building renovation projects, these funds are requested with no-year authority.

Collections of the National Museum of Natural History constitute one of the most valuable educational and research resources in the world. The modernization of the Collections Information System will make this resource accessible to a broad scientific community for critical biodiversity and environmental change studies. At the same time, the Museum will be able to maintain the necessary level of accountability for the National Collections.

Support Funding for the East Court (10 workyears and \$637,000) - This initiative will help NMNH respond to the growing and pressing needs relating to physical plant issues. Over the next decade, many renovations will occur throughout the building, including the complete replacement of the mechanical system. These renovations will disrupt all functions of the Museum: public exhibits, education, research, and collection maintenance. A number of factors combined to create this need, including the age of the physical plant, which demands ever-increasing attention; the Institution's already successful initiatives to augment the capabilities of the Office of Design and Construction, which has resulted in the need for NMNH to improve its corresponding efforts; and the requirement for action in response to the Institution's expanded internal audits program. The present initiative is a step toward building NMNH's ability to respond to this multi-faceted need.

The staff required for FY 1993 will perform the following tasks:

- review, from the perspective of the Museum, all documents produced by the architectural firms doing the design of projects, to ensure that the Museum's requirements are met. Previous experience has shown that architects and engineers, who are often unfamiliar with the Museum's operations, do not consider the many aspects of design that are important to the functioning of the Museum. Special attention to design and construction will decrease the likelihood of damage to the collections during the projects.
- inspect, from the perspective of the Museum, major construction projects.
- provide the initial plan for the temporary and permanent relocations into the East Court Building, as well as the temporary relocations throughout the Natural History Building itself. All of the 1,100 staff in the building and most of the approximately 120 million specimens will have to be moved during these construction projects. Most staff will move at least twice. Careful planning is necessary to ensure that disruption to all research and public programming activities is minimized. Relocation planning for the Major Capital Renewal Project (mechanical renovation) will begin in FY 1992, to keep the project on schedule.
- document in writing the relocation plan, based on the design of the renovations, and train Project Move staff in its implementation.
- work with the Office of Exhibits staff to prepare proper notifications and signs for public areas as they are renovated, to ensure that visitors are made aware of closings and alternative access routes through the Museum.

Three project managers, five project specialists, one administrative assistant, and a secretary (10 workyears and \$503,000) and \$134,000 for travel and support costs for FY 1993 will assist the NMNH in keeping these projects on schedule. The \$134,000 will

support travel (\$7,000), other services (\$35,000), communications and reproduction (\$7,000), and supplies and equipment (\$85,000).

The Museum is badly in need of a renovated physical plant to serve its research and public programming activities. This funding will facilitate the effort to carry out these projects on schedule with the least amount of disruption. It will also ensure that the newly renovated building and the new East Court Building meet the functional needs of NMNH as it enters its second century.

Facility and Safety Management (6 workyears and \$666,000) - The National Museum of Natural History is an active partner with the central Smithsonian Facilities Services units in meeting the physical plant needs of the Institution. The Museum's specific responsibilities include the Natural History Building, the Smithsonian Marine Station at Link Port (SMSLP) in Florida, the Museum Support Center (MSC), and portions of the Silver Hill Facility and the Smithsonian Institution Services Center. The Museum's programmatic initiatives require maintenance of the plant and continuous short- and long-term space planning and changes in the physical plant, such as the establishment of new research laboratories, the incorporation of changing technologies, the renovation of exhibits, and improvements in the collections storage areas. These initiatives are not being addressed in the new East Court Building or in the Major Capital Renewal projects.

The Museum houses 231 Federal researchers, research associates, curators emeriti, and scientists from other agencies and has 26 open exhibit galleries that serve more than six million visitors each year. The types of research conducted in the Museum require the use of many different chemicals. The Museum estimates the FY 1991 costs for hazardous waste removal will total \$27,000, an expenditure for which no base exists. The Museum must purchase supplies and equipment, such as respirators and hazardous chemical storage cabinets, to meet current safety laws. While the Institution requests Repair and Restoration funding to make major repairs, the Museum must bear the cost of minor repairs to the Natural History Building to meet safety laws. The requirement for formal reporting on safety issues has grown exponentially in recent years. The reporting requirement alone is a time-consuming task.

Safety responsibilities have become complex and require staff with technical knowledge and specialized training. Three safety officer positions and one secretarial position (4 workyears and \$192,000) will perform this function. One facility operation program assistant (1 workyear and \$51,000) will support existing senior staff in the areas of space planning, plant repairs, and alterations. Other funding of \$388,000 will provide for travel (\$8,000), communications and reproduction (\$9,000), contractual services and training (\$121,000), and supplies and equipment (\$250,000). Travel funds will support staff participation in facility training and in Occupational Safety and Health Administration safety training. All other funds will be used for safety and building maintenance supplies and other services, such as a new, enhanced pest-control contract and hazardous waste removal, replacement of old custodial and material handling equipment and public furnishings, purchase of new safety equipment, automation of space data, and staff support.

The request for administrative infrastructure support will alleviate a severe shortfall in the fund management aspects of accounting for NMNH funds. The Museum manages almost 600 separate Federal and Trust accounts in 28 departments and units at NMNH, MSC, and SMSLP, totaling more than \$35 million. NMNH requires increased resources to manage these funds properly and to reconcile Museum records with central accounting records in

a timely fashion. To keep pace with growing programs and to exercise more effective control of resources, the bureaus have an expanded responsibility to monitor financial records. This larger responsibility has added a significant workload to the Museum, for which no additional support is available. The Museum is unable to provide additional resources from its base for this support without negatively affecting other major program activities.

One administrative technician (1 workyear and \$35,000) will provide fund-management support in the Administrative Office. Tasks will include data entry of obligations into the Museum's automated fund-management system, reconciliation of central accounting financial reports, review of obligating documents to ensure proper use of funds, and training of administrative staff throughout the Museum. Without this position, the Museum will not be able to continue to maintain proper financial control over existing funds.

These requested funds will assist the Museum in meeting its management responsibilities for better funds control and for physical plant needs in its various the facilities. Improved occupational health, hazardous waste handling, and safety training will assist in ensuring the safety of the staff, public, collections, and other property.

Molecular Systematics Greenhouse Facility Staff and Support (3 workyears and \$215,000)

- The NMNH greenhouse serves as the repository for living plant material critical to studies on plant systematics, ecology, evolution, and biodiversity. The impending extinction of many of the world's plant and animal species in their native habitats dictates the acceleration of biodiversity investigations. Staffing the Laboratory for Molecular Systematics/Botany Greenhouse will enable NMNH curators to continue to collect and maintain important collections of tropical plants not duplicated by any other Federal or non-Government institution for the purpose of ex situ conservation.

Currently, plants are grown in four locations: in the greenhouse on the NMNH East Court roof; at the conservatories of the U.S. Botanic Garden (USBG) on the Mall; in the USBG greenhouse range at Poplar Point, Maryland; and in the Louisiana State University greenhouse, where a scientist at the Museum's Laboratory for Molecular Systematics (LMS) is an adjunct professor. Funds were provided by Congress in FY 1991 to build a greenhouse at Suitland, Maryland, to replace and expand permanently the limited greenhouse space available and to consolidate the growing facilities into one greenhouse. Greenhouse facilities at the Museum Support Center complex in Suitland are important to the studies on plant molecular systematics and evolution conducted by botanists at the new Laboratory for Molecular Systematics. With completion of the new greenhouse facility in FY 1993, NMNH will require a greenhouse manager and two technicians (3 workyears and \$88,000) and equipment, supplies, and other services (\$127,000) necessary for maintaining the plant specimens.

Laboratory investigations of molecular and morphological systematics depend upon the availability of living specimens housed in the greenhouse. Through field trips by curators to areas around the world, especially the tropics, living material is brought back to the greenhouse where it can be propagated. It is impossible to conduct in the field the sophisticated experiments now in progress in the Laboratory for Molecular Systematics and laboratories of the Department of Botany. The greenhouse provides the means to undertake these modern investigations. The greenhouse serves a vital function both as a research facility and conservation repository, enhancing the role that the Natural History Museum plays in biodiversity research.

Exhibit Hall Restoration (\$800,000) - Existing NMNH exhibit halls, most of which were installed more than 30 years ago, do not meet current scientific or educational standards. In addition, many are offensive to visitors and do not reflect current standards for racial, cultural, and gender equity and fairness. The Museum must correct these serious errors of fact and perception or close the halls, rather than allow them to misinform the public. The ten-year plan for the maintenance, upgrade, and renovations of the Museum's permanent exhibitions program will require annual Federal funding of \$5 million including:

- \$1.5 million/year to maintain existing exhibitions
(\$150 per square foot x 10,000 square feet)
- \$2.5 million/year in exhibit upgrades
(\$250 per square foot x 10,000 square feet)
- \$1.0 million/year toward full renovations project (with an additional
\$3 million per year raised from private corporate sources).

The Museum will use most of the requested increase (\$650,000) in FY 1993 to accelerate the repair, maintenance, and upgrading of its existing permanent exhibit halls, including Human Origins, Africa, and Western Civilization. When combined with major corporate contributions, the remaining portion of the increase (\$150,000) will allow completion of the new Insect Zoo by the fall of 1993. As authorized in FY 1991, the Museum requests that these funds be provided as a no-year appropriation to allow for the large, multi-year contracts required for major hall design and construction.

The FY 1991 budget for permanent exhibitions is \$3 million, with \$1.7 million supporting salaries and \$1.3 million in nonpersonnel supplies and services. This allows the Museum to upgrade, repair, and renovate only 3,000 square feet of permanent exhibitions per year. The requested increase of \$800,000 will accelerate this program. Current square-foot costs for long-term, complete renovations for such exhibits average \$450 per square foot, with more than 100,000 square feet of exhibit renovation required. Aggressive fundraising is under way to increase both the pace and quality of permanent exhibit hall restoration. Continued increases in Federal resources will both match these private funds and demonstrate the Federal commitment to a full partnership in making the NMNH exhibits national models for public understanding of science.

Natural History Intern Program (1 workyear and \$126,000) - A primary goal of NMNH is to educate young scientists in the fields of natural history, comparative biology, and systematics. The Intern Program provides unique opportunities for undergraduate students to be directly involved in systematics research and museum studies. Funding for this program will ensure participation by a diversity of students with varied backgrounds, aspirations, and skills.

The current national concern with biodiversity loss and global change is expanding without the simultaneous increase in training of scientists to tackle these problems. Universities and colleges are abandoning the fundamental organism-based programs in systematics and ecology. The role of the Intern Program at NMNH has therefore become critical. The central objective of this program is to stimulate and encourage students to pursue careers in biodiversity-based professions, especially those who would not otherwise consider such an occupation.

The staff, facilities, and collections available at the NMNH for guidance and inspiration to interns are unparalleled. The success of the Intern Program depends on attracting and training a diverse and heterogeneous group of young scientists. Until now student expenditures for participation in the program have been funded in large part from outside the Museum. This inconsistent financial position narrows the potential scope of the program and decreases the overall pool of student applications. Achievement of the potential goals of the program in FY 1993 requires a full-time program coordinator (1 workyear and \$42,000) and travel, stipend, housing, and supplies (\$84,000) for 24 students.

The training of professionals to solve the problems of world biodiversity loss and global change requires a concerted effort to attract young scientists to the field of natural history and systematics. NMNH's Intern Program exposes students to all facets of museum work through a structured series of lectures, demonstrations, tours, laboratory work, curation, and individual projects. This program performs a unique educational role in the Institution by encouraging a diverse array of talented students from all social backgrounds to pursue careers in the biological sciences.

Conservation Training Program (2 workyears and \$125,000) - For many years, the Smithsonian Institution has offered educational opportunities through its fellowship programs to individual scientists and scholars, and over the years these opportunities have increased in scope and audience to address a growing demand. While many recipients of these awards have been foreign nationals, specific initiatives for training nationals in developing countries were not developed until the 1980s. Since then the conservation of biological diversity has become an institutional theme and has evolved into a series of complementary global initiatives with a concentration on Latin America and Asia.

With mounting awareness of the consequences of global change occasioned by the destruction of the tropical greenbelt, these programs are still evolving to meet increasing demands, and NMNH staff are exploring new ways of addressing the problem through training and education. Efforts have been coordinated by the establishment of the Smithsonian Conservation Training Council, composed of representatives from the National Museum of Natural History, the National Zoological Park, Smithsonian Tropical Research Institute, and the Smithsonian Man and the Biosphere Program, as well as the Assistant Secretaries for Research and External Affairs.

Funds are requested to hire one biologist to serve as workshop and training course coordinator and one writer/translator to prepare course materials in appropriate languages (2 workyears and \$77,000). Additional funds will transport students, faculty, and materials (\$14,000), support printing and reproduction (\$15,000), and purchase necessary supplies, materials, and equipment for field training courses in developing countries (\$19,000).

International Conservation Training courses received a high priority in the last report of the Smithsonian Council, and the infrastructure is already in place to produce the necessary courses. The requested increase will allow the implementation of important conservation training efforts in developing countries that will lead to better management decisions for natural resources in critical areas of the world.

Collections Equipment and Supplies (\$200,000) - Increased base support for collection storage, pest management, conservation equipment, and supplies ensures present and future

generations of the continuing usefulness of the National Collections for research and education.

With this funding, the Museum will purchase storage equipment for new acquisitions and replace seriously inadequate older equipment. New equipment will help eliminate pest infestations, dust penetration, overcrowding, and nonsecure conditions for valuable collections. Metal storage cases will replace a portion of the wooden cases now housing vertebrate collections. Recent research has shown wooden cases to have detrimental implications for the conservation of vertebrate skins. The Museum will also fulfill conservation needs by purchasing pest management equipment and ultraviolet filters for collection protection. In addition, funds will enable the Museum to meet the rising costs of basic supplies such as archival label paper and preservatives.

The Museum's base funding for collection equipment and supplies is \$90,000, and yet annual needs average more than \$300,000. Year-end funding, when available, has provided marginal support for some purchases. For FY 1993, a request of \$200,000 will provide supplies and equipment to meet collection growth, maintenance, and security needs.

Physical care of collections, in keeping with professionally accepted standards, is an obligation. Without appropriate storage for new acquisitions and replacement of old inadequate storage, and without appropriate conservation equipment, the collections will deteriorate and no longer be useful for exhibition and research. The Museum must ensure appropriate stewardship of the National Collections.

Development Office (4 workyears and \$280,000) - In 1988, the Smithsonian Institution decentralized development activities for the major bureaus. NMNH was provided a three-year start-up loan by the Institution, after which the Museum was expected to cover full funding of development efforts by raising unrestricted funds. During this period, gifts and foundation grants received by the Museum have increased significantly, more than doubling donations received in any year prior to establishment of an in-house Development Office. One-third of the \$6 million goal for raising private support for the new Geology, Gems and Minerals Hall has already been achieved.

While bringing the fund-raising effort closer to the projects has proven successful in increasing restricted gifts and grants, the Museum has not been successful in raising unrestricted funds to cover Development Office costs. Donors want to fund specific projects, such as an exhibit or a particular research effort. NMNH has no independent business activity bringing in unrestricted revenue.

Funds are requested to support an associate director for development and public affairs, one full-time development officer, a development assistant, and a secretary (4 workyears and \$194,000). The associate director will oversee all development and public relations activities in the Museum as well as actively support major fund-raising projects, such as the capital campaign already under way for Geology, Gems and Minerals. The development officer will provide support for raising funds for scientific projects, as well as assist with existing public programming campaign efforts. The assistant will provide research services in matching potential donors with Museum projects and maintain ongoing donor relations. The secretary will support the Office, maintain donor records, prepare acknowledgments, and provide status reports on outstanding pledge payments. Travel support is required for development officers to meet with potential donors (\$25,000). Other support requested includes express mail and long-distance telephone services (\$2,000); printing of campaign brochures (\$15,000); contracts for services, including marketing and

public relations studies related to fund-raising potential for specific projects (\$25,000); and general office supplies and equipment (\$19,000).

The intended result of securing Federal funds for the development effort is to increase support from the private sector for the Museum to pursue its mission of conducting scholarly research and promoting science education through an integrated program of temporary and permanent exhibits, outreach activities, and an expanded internship program.

Arctic Research Vessel (\$50,000) - In 1988, Congress provided funding for the Arctic Program as a permanent national program for Arctic research and education in the National Museum of Natural History. Present research interests focus largely on archeological and environmental studies along the eastern coast of Canada, particularly in Labrador. Plans are also under way to increase fieldwork currently conducted in Alaska and Siberia. Most of the archeological sites under investigation are inaccessible by land; instead, they must be reached by Arctic waterways. For this reason, a reliable research vessel is essential to the continuation of successful Arctic Program research. Lacking such, further program research will be stalled.

Currently, the Museum employs a 50-foot vessel on loan from the University of Massachusetts. However, the five-year loan period is up in 1992, and the vessel must be returned. For Arctic research to continue, a trustworthy vessel is a minimal requirement. Existing funds are not sufficient to purchase a new boat, which would be safer and require less maintenance than any other solution. The Museum has explored various avenues of vessel acquisition, including Coast Guard seizures (exclusively warm-water vessels and consequently not appropriate) and decommissioned Coast Guard patrol boats (of which the smallest available are 82-foot vessels and so much too large and expensive to operate for the Arctic Program's purposes and resources). The only avenue left is to rent a research boat.

Through inquiries among Canadian scientists, NMNH has located several boats that would fit its needs. Each is safe, ideally outfitted for research, and requires low maintenance. Their owners have expressed a willingness to work out a rental agreement with the Museum. Funds will cover the full costs of running, maintaining, and repairing the boat in addition to the rental fee. Boat maintenance and repair expenditures over the past several years indicate that an additional \$50,000 is needed to cover all expenses. With this increase, continuance of the Arctic Program's exciting and successful research program, critical to understanding human interactions with the fragile Arctic ecosystems, will be ensured.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - The Museum derives funds from a variety of sources, including the Museum's share of net proceeds of the Museum shop and food concessions. During FY 1991, allotments provided for the costs of the Museum director, three staff members, and support for two meetings of the Museum's new National Council.

NMNH benefits from the Institution's many awards programs such as the Special Exhibition Fund, Collections Acquisition Program, Research Opportunities Fund, International Exchange Program, Research Exchange Fund, and Scholarly Studies, all of which support research, education, and exhibit projects. Funding supported a science education program for local minority students, as well as projects focusing on the biogeography of

Great Basin Spring snails and the pleistocene paleoecology of early humans in the Southern Kenya Rift. These are just three examples of the many awards made to the Museum in FY 1991.

Restricted Funds - The Museum receives support for specific programs and projects through donations from private individuals, foundations, and corporations. Private contributions to the \$6 million campaign for funds to construct a new Geology, Gems and Minerals Hall, expected to open in 1995, passed the \$2 million mark in 1991. A few of the research grants awarded include support from the World Wildlife fund for the Biological Dynamics of Forest Fragments project in Brazil and from Space Biospheres Ventures for developing the marsh/marine/savanna ecosystem model in Biosphere II, which opened in September 1991.

NMNH manages the Smithsonian Marine Station at Link Port (SMSLP), Fort Pierce, Florida. Hunterdon Endowment funds are dedicated to the basic operating support of this oceanographic research facility for use by Smithsonian visiting scientists as well as numerous visiting investigators, both national and international. Research focuses on the life history, systematics, and ecology of a wide spectrum of plant and animal marine life. Seward Johnson Endowment funds provide for the support of the Johnson-Sea-Link submersible owned by the Harbor Branch Oceanographic Institution (HBOI), the host facility.

NMNH is proceeding with a fund-raising strategy to support construction of a laboratory and residential facilities that will serve the mission of SMSLP and its research initiatives. The favorable location of SMSLP, along with the signing of a long-term lease agreement between the Smithsonian and HBOI, have made this major step forward possible.

Government Grants and Contracts - These funds are provided by various Government agencies and departments for special projects conducted at the Museum to take advantage of its unique scientific expertise in systematics. Examples of this type of activity include collections management of biological specimens for the Mineral Management Service's Outer Continental Shelf Environmental Studies; the study of neoplasms and related disorders in invertebrates and ectothermic vertebrate animals for the National Cancer Institute; and analysis of polar biological materials and cooperative systematics studies by the Museum's Smithsonian Oceanographic Sorting Center (SOSC) for the National Science Foundation.

NATIONAL AIR AND SPACE MUSEUM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Actual	229	10,833	3	201	43	4,174	-	4,937	6	758
FY 1992 Estimate	231	11,650	3	214	46	4,232	-	3,112	1	306
FY 1993 Estimate	240	13,353	3	214	46	4,496	-	2,037	1	279

* FTE = Full-time equivalent.

**FTP = Full-time permanent

ABSTRACT - The National Air and Space Museum (NASM) is an international repository for artifacts and documentation related to the development of aviation, space flight, and space science. Through its exhibitions, research, collections management, and education programs, the Museum serves a wide public and scholarly community interested in the history and technological achievements of aviation and space flight. In addition to its Mall location, NASM maintains a facility for the preservation, restoration, and exhibition of artifacts at the Paul E. Garber Preservation, Restoration, and Storage Facility in Suitland, Maryland. The Institution is seeking authorization for planning and design of an extension facility at Dulles International Airport for storage and exhibition of its largest aircraft and spacecraft.

For FY 1993, the NASM requests an increase of 9 workyears and \$1,703,000 for development (3 workyears and \$162,000); collections management (3 workyears and \$393,000); exhibits (\$800,000); research (2 workyears and \$186,000); and education (1 workyear and \$162,000).

PROGRAM - The major programs of the National Air and Space Museum are historical and scientific research, exhibits, collections management, preservation and restoration of artifacts, and education and outreach activities.

Research - The Museum is a primary resource center for the science and technology of aviation, space, and geophysical science. NASM's Center for Earth and Planetary Studies (CEPS) serves as a repository for remote-sensing data. Researchers from CEPS, the University of New Hampshire, and the Czechoslovakia Academy of Sciences are collaborating to assess forest and soil damage due to acid deposition in mixed hardwood and conifer forests within Czechoslovakia. A new study was initiated to study vegetation loss to urban growth in the Washington, D.C., area.

The Laboratory for Astrophysics has developed a new generation of freestanding metal mesh reflectors for the Infrared Space Observatory (ISO) using new microelectronic fabrication techniques. These meshes exhibit unparalleled geometric precision, with line

widths as small as 2.5 microns. Spectrometers on ISO and elsewhere equipped with these advanced reflectors will achieve new levels of sensitivity, making fainter astronomical objects accessible to spectroscopic study at infrared wavelengths.

Curators and historians in the Department of Space History are engaged in research on a wide variety of topics concerning the history of rocketry and space flight, including manned space exploration. Some projects currently under way include biographies of the astronomer Henry Russell and the physicist Lloyd Berkner; a book on the evolution of modern computing; a study of government support for large-scale scientific enterprises; and a history of the national weapons laboratories. Research also continues in the Aeronautics Department on a study of the air war in Vietnam that will result in an exhibition and a book; an edition of the unpublished autobiography of the pioneer aviator A. Roy Knabenshue; a study of commuter airliners; and aspects of Soviet aviation history.

Exhibitions - In FY 1991, the Museum opened "Art in the Cosmic Age," an exhibit focusing on a collaborative effort by Western and Soviet space artists to depict their views of other planets and the universe. In FY 1992, major new exhibits will include a World War I gallery, which examines the grim realities of aerial combat in contrast to the romanticized myth of "knights of the air." In commemoration of the Columbus Quincentenary, the exhibit "Where Next, Columbus?" will explore the role of humans and robotics in space exploration during the next 500 years. Also opening in FY 1992 is an exhibit commemorating the 25th anniversary of the debut of the television series "Star Trek." In FY 1993, "Principles of Flight," an exhibit demonstrating the basic forces of flight, will open. This gallery will feature hands-on and interactive units demonstrating the principles that govern the harnessing of these forces.

A new IMAX film, Blue Planet, premiered in FY 1991. Footage for this film was shot by the astronauts on recent shuttle missions. The film explains the natural and man-made forces affecting the Earth's delicate environment. The Museum is co-producing another IMAX film highlighting the role of man and machines in space exploration. It is scheduled to open in FY 1995.

Development of Collections - Significant acquisitions in FY 1991 include personal and flight clothing items representative of the 99th "Black Wings" squadron from World War II, an F8D weapons systems trainer, a Peugeot V-8 engine, and a radial Pitcairn-Brewer engine. Archival acquisitions include three collections of World War I aviation material and two rare 19th-century booklets related to aerial experimentation.

Museum staff is devoting considerable time to collections processing and rehousing. Other projects include a formal conservation assessment of the collection housed at the Garber Facility and establishment of a collections workroom for holding and treatment of the collection. The NASM Archives staff recently completed a guide to the Museum's archival holdings that serves as a reference tool for the research community.

Preservation and Restoration of the Collections - The staff continues to concentrate on restoring the Enola Gay B-29 bomber in anticipation of a 1995 exhibition. In support of the new World War I gallery, the staff completed the restoration of the Voisin French night bomber, an FE-8 cutaway and LeRhône engine, German Pfalz and Fokker fighters, a balloon basket, and several aircraft engines. Three major aircraft, an SR-71 Blackbird reconnaissance aircraft, a C-130 cargo plane, and a Super Constellation aircraft, currently stored outdoors at Dulles Airport, have received conservation treatment to better withstand outdoor storage.

Publications - NASM published 14 books, monographs, and articles in FY 1991. These included U.S. Women in Aviation, 1940-1989 by Deborah Douglas, A Spacefaring Nation by Martin Collins and Sylvia Fries, and Boeing 247: The First Modern Airliner by Frank Robert van der Linden. Monographs published in the Smithsonian History of Aviation series included Flying Tigers: Claire Chennault and the American Volunteer Group by Daniel Ford and Airshipmen, Businessmen, and Politics, 1890-1940 by Henry Cord Meyer. This series will continue to publish several new monographs in the upcoming years. In FY 1992, publications will include Looking at Earth: Satellite Views of a Dynamic World by Priscilla Strain and Fred Engle and Principles of Flight by Paul Ceruzzi.

Public Education and Orientation - The Museum has prepared a curriculum guide and poster package to accompany the new IMAX film, Blue Planet. Theaters worldwide showing the film distribute these materials to teachers in their areas. A highlight in FY 1991 was a unique workshop focusing on oral histories of the experiences of the Tuskegee Airmen. At the conclusion of the workshop each teacher interviewed an airman.

The Museum has expanded its outreach efforts to include staff talks and demonstrations at several local public schools as well as special class visits to the Museum. For the third year, the Museum participated in the D.C. Public Schools Chapter 1 Program. This year's focus was to teach students how to produce an exhibit. Two fifth grade classes visited the Museum once a month for planned programs, and staff members gave special presentations at the school. At the conclusion of the series, students worked in teams to produce exhibits. A brochure distributed to teachers and educators in the D.C. area will inform them of the programs available at NASM. For the second year, the Aero Club of Washington and NASM have sponsored a jobs program that gives Washington area high school students summer employment in aviation and space-related jobs.

Other FY 1991 initiatives included a successful series on the "Legacy of Strategic Bombing." Lectures, films, and panel discussions examined the origins, practices, and consequences of strategic bombing from its earliest premonitions before World War I, through its most intense employment during World War II, and up to its influence on the development of today's strategic nuclear arsenals.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, NASM requests an increase of 9 workyears and \$1,703,000 for development (3 workyears and \$162,000); collections management (3 workyears and \$393,000); exhibits (\$800,000); research (2 workyears and \$186,000); and education (1 workyear and \$162,000).

Development (3 workyears and \$162,000) - NASM's fund-raising efforts in the past have secured corporate support for exhibitions and computer and scientific equipment. Expanded fund-raising capabilities are now needed to provide additional funds to care for the collection, support research initiatives, prepare exhibits, produce more educational materials and programs, and increase building maintenance and upkeep for the safety and comfort of visitors. With additional staff, this program could provide substantial resources for Museum projects.

With the requested funds, the Museum will hire a senior development officer (1 workyear and \$60,000) to raise funds for the NASM extension. This function is critical because the Garber Facility lacks indoor artifact storage space. Many large artifacts are housed outdoors or in temporary shelters without proper humidity and temperature controls. Even with staff members attempting to preserve these artifacts, NASM cannot assure their longevity for future generations without the proper environment for storage.

Additional development officers (2 workyears and \$102,000) will expand fund-raising efforts to include foundation grants, membership programs, planned giving, and individual contributions. These two positions will raise funds for the NASM extension as well as to support a variety of other needs in all program areas, including support for field research, participation in scientific meetings, production of state-of-the-art exhibits and educational materials. Additional staff in the Development Office, will further make it possible for NASM to pursue and establish additional programs for training in Museum fields.

With the requested increase, NASM will be able to help fund the expansion of its facilities and programs to meet public needs.

Collections Management (3 workyears and \$393,000) - The physical care of the collections, through conservation, preservation, and restoration, is the primary goal of this program. A cyclical inventory tracks all artifacts. Collections management programs also ensure researchers and the public, including future generations, greater access to the collection.

Currently the Museum has four environmentally controlled storage buildings that are filled to capacity. Additional storage (\$205,000) is required if NASM is to continue to acquire spacesuits, pressure suits, flight clothing, small metal or composite material artifacts, and artwork. These items are essential for continued research and exhibits.

A chemical laboratory (\$45,000) will enable NASM to arrest and prevent chemical corrosion of large metal artifacts. The proposed laboratory will be shared by the conservation and restoration staffs. It will treat metal objects for corrosion by submersing them in a suitable chemical bath. The 450 gallon tanks now used in this process have a finite lifetime, and while major rebuilding has extended the lifetime of two tanks, they must be replaced in the near future. Tables, desks, sinks, fume hoods, utility hookups, and other equipment will also need to be purchased to outfit the new laboratory.

With the hiring of a conservator in FY 1989, the conservation program has expanded to include spacecraft and artifacts already on exhibit as well as aircraft in the restoration shop. If conservation efforts are not increased in the near future, historic artifacts face irreversible deterioration. An aggressive program of object conservation requires a conservation technician (1 workyear and \$35,000) to assist the conservator. The technician will investigate improved methods of collections care for objects in storage and on exhibit. Also, the duties of this position will include continual monitoring and assessment of the collection. The request includes funds (\$50,000) to hire contractors for treatment of some artifacts in need of immediate attention.

The Collections Maintenance Division provides support for artifact moves, storage, and care as well as for the cyclical inventory project. With the Museum's active artifact loan program, a museum technician (1 workyear and \$35,000) is needed to stay abreast of the inventory, and to track and coordinate the loan program. This new position will improve accountability and care for the collections, including the cyclical inventory project and introduction of improved methods for storage, movement, and preservation.

An additional computer technician (1 workyear and \$23,000) for collections data will promote the diffusion of information throughout the museum and research communities. The position will also increase control over access to collections through on-line automated systems.

The Museum must continue to advance its collections management efforts by providing proper storage and the staffing for preservation, conservation, and restoration. With this increase in positions and funding, NASM's collections management program will be able to improve its services to the Museum and to the public.

Exhibits (\$800,000) - The NASM's long-range exhibits program emphasizes the development of displays that will encourage visitors to think critically and to understand the social, political, and economic contexts that shaped, and were in turn influenced by, aviation and space technology. The Museum plans to establish two rotating galleries, one to focus on aeronautics and the other on space history.

The "Principles of Flight" exhibit will provide the visitor with an understanding of the basic physical principles that dictate how form follows function and allow aircraft and spacecraft to fly. Through the use of hands-on and interactive displays and live demonstrations, the exhibit will accomplish these goals in an entertaining and thought-provoking way, allowing visitors to discover for themselves the fundamental concepts of flight. "Vietnam" will be the first exhibit offered in the Museum's new rotating gallery. exhibit will examine the many roles of vertical flight, in both combat and noncombat, and will explore how helicopter technology influenced the planning and conduct of the American military effort in Southeast Asia.

The requested increase of \$800,000 will fund "Principles of Flight" (\$500,000) and "Vietnam" (\$200,000) as well as "Where Next, Columbus?" (\$100,000), NASM's Columbus Quincentenary commemoration. These additional resources will enhance the quality and content of NASM's exhibits by providing support for in-depth research, development of hands-on demonstrations, and interactive displays.

Research (2 workyears and \$186,000) - Researchers in the Center for Earth and Planetary Studies' (CEPS) Spectral Reflectance Laboratory are studying drought damage, sand transport, and the desertification processes in North America and Africa. Another study uses remote sensing and field data to map soils, vegetation, and morphologic relationships at Mpala Ranch in central Kenya.

The requested increase will support a physical research scientist (1 workyear and \$51,000) and an assistant physical research scientist (1 workyear and \$35,000) for the Spectral Reflectance Laboratory. An additional \$100,000 will upgrade the laboratory and defray costs related to dry lands and remote-sensing research in Kenya.

Research conducted by CEPS staff evaluates the time scale of the changes that are affecting the earth. The requested increase will enable this research to continue to contribute to an understanding of the effects of global change, a primary concern of nations all over the world.

Education (1 workyear and \$162,000) - NASM seeks to increase its educational outreach efforts at the local community level through live science demonstrations held daily in various galleries and increased availability of its curriculum packages on contemporary subjects in aviation and space.

NASM conducts science demonstrations in the "Looking at Earth" and "Stars" galleries. With the addition of a science demonstration coordinator (1 workyear and \$40,000), the Museum will expand this successful program. The coordinator will develop new

demonstrations and train staff to perform them. NASM requests an additional \$7,000 to purchase materials used in the demonstrations.

With \$40,000 of this request, the Museum intends to start a teacher-in-residence program with the D.C. school system. Each year a D.C. teacher will spend a one-year sabbatical at the Museum assisting in the development of materials for use in the D.C. public schools. The Museum will be responsible for the teacher's salary and will provide work space and materials. Along with producing educational materials, this effort will help to build stronger relationships within the community and develop an early interest in science education among schoolchildren. In addition, teachers currently receive, free of charge, curriculum materials that NASM staff members prepare and revise. An increase of \$75,000 will enable the Museum to distribute its materials to teachers across the nation.

The United States must improve the scientific literacy of its citizens. NASM can assist by increasing the number of science demonstrations that are available for visitors' participation and by developing curriculum materials that relate to educational needs. It is especially important that schoolchildren learn more about the history and technology of air and space flight, science, and the need to care for our fragile Earth.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds come from a variety of sources, including the Museum's share of net proceeds from the museum shops and restaurants, a share of the net proceeds resulting from bureau activities (such as the theater and planetarium), and small allotments. In addition to meeting expenses of the theater and planetarium, these funds finance fellowships, research chairs, guest lecturers, symposia, and special events. A portion of the proceeds from the theater and planetarium provide particular support for the production of new IMAX films, including Blue Planet and Destiny in Space, as well as planetarium shows and other Museum programs. Blue Planet, which premiered in late 1990, shows the earth from space and the effects of both natural and human forces on global environmental systems. The Museum also receives corporate support for these new films. In FY 1992, Exploring New Worlds will premiere in the Albert Einstein Planetarium. The show, in keeping with the Smithsonian-wide observance of the Columbus Quincentenary, will look at past, present, and future explorations of this world and others. It attempts to explain what compels humans to explore their surroundings from the extremes of the subatomic world of elementary particles to the ultramicroscopic structure of the universe. A new presentation method--an addition to the Planetarium's already sophisticated systems--is an array of video projectors that will show single or grouped images on the dome from either laser videodisk or videotape.

The Lindbergh Chair of Aerospace History and the International Fellowship provide continuing support for distinguished scholars to study at the Museum. Other fellowship programs include Guggenheim, Verville, Embry Riddle, and Martin Marietta internships, which support distinguished scholars, predoctoral, postdoctoral, and minority students in aviation and space science.

Restricted Funds - Funds provided are in the form of restricted endowments that specify the use of donations or bequests and of gifts and foundation grants by individuals, organizations, or corporations for specific purposes. Examples of these funds are the Ramsey Endowment for research relating to naval flight history, the Guggenheim Endowment for lectures and stipends, and the NASM Education Fund. One recent bequest will help fund the "Where Next, Columbus?" exhibit. NASM has received numerous corporate monetary

donations, to support collections management, the Laboratory for Astrophysics, various educational programs, exhibits, publications, the Embry Riddle Internship Program, public science demonstrations, Exploring Space Lecture Series, and the General Electric Aviation Lecture Series.

A children's corner in the upcoming "Principles of Flight" gallery and the restoration of the Enola Gay have been partially funded by contributions from individuals.

Government Grants and Contracts - The National Aeronautics and Space Administration (NASA) is the primary source of government grants to NASM. Continued funding from the NASA grant program supports research activity in planetary geology by the Museum's Center for Earth and Planetary Studies, specifically for photogeologic investigation of planetary tectonic features, the structural geology of the Basalt Plains of Washington State, geographic mapping of Mars, and the Planetary Image Facility. In FY 1991, NASA partially funded a new research project to study forest damage in Czechoslovakia due to air pollution, a project related to the Institution's global change research program. NASA also sponsored a NASM staff member as a mission scientist on the European Space Agency Infrared Space Observatory. The Laboratory for Astrophysics has received funding from NASA for continued research in the field of infrared astronomy.

NATIONAL MUSEUM OF AMERICAN HISTORY

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	353	16,720	1	131	9	897	2	1,442	-	-
FY 1992 Estimate	356	17,790	1	163	-	880	-	5,157	-	-
FY 1993 Estimate	380	19,892	1	163	-	841	-	5,044	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The National Museum of American History (NMAH) is an educational institution dedicated to understanding the experiences and aspirations of all the American people. Through collections, research and publications, exhibitions, and an array of public programs including lectures, symposia, concerts, tours, and demonstrations, with special emphasis on musical performance, the Museum preserves and interprets the Nation's heritage for scholarly and general audiences. Its collections of artifacts number in the millions. These collections, including the National Philatelic and National Numismatic Collections and extensive archival holdings, represent the social, cultural, scientific, and technological development of the United States and constitute one of the most comprehensive history collections in the world. In all of its endeavors, the Museum makes a special effort to recognize the diverse aspects of American culture and to present that diversity to audiences on the Mall and elsewhere in the United States.

For FY 1993, the National Museum of American History requests an increase of 24 workyears and \$2,102,000 to provide critical storage space and support for displaced collections (1 workyear and \$195,000); enable the Museum to achieve full collections management accountability (10 workyears and \$400,000); provide funding for mandatory building management initiatives such as trash recycling and hazardous-waste removal (1 workyear and \$92,000); secure additional computer hardware and software for curatorial and research support (\$700,000); provide adequate staffing for educational services to increased numbers of Museum visitors (3 workyears and \$150,000); fund a development officer to increase private gifts and grants to the Museum (1 workyear and \$112,000); enable the Museum to complete asbestos removal at its Silver Hill Facility in Suitland, Maryland (6 workyears and \$337,000); and provide for ongoing maintenance to computer components of modern exhibitions (2 workyears and \$116,000).

PROGRAM - The National Museum of American History investigates, collects, preserves, interprets, and honors the heritage of the American people through original research, publications, exhibitions, and public programs designed to increase the understanding of American history.

Collections Acquisition - In FY 1991, the Museum received a number of significant objects through purchases and gifts. NMAH acquired two very rare and important timepieces: a 19th-century pocket watch that belonged to Sandford Fleming, the inventor of global standard time; and a shelf clock in the form of a lighthouse, made in the 1830s by the Willards of Massachusetts, renowned American clockmakers. Two important astronomical acquisitions included an 18th-century Hadley quadrant to determine latitude at sea, one of a very few surviving instruments of this type that were made in America, and Gerald Sussman's 1984 digital orrery, a specialized computer used to compute the orbit of the planet Pluto over the next 845 million years. Significant additions were made to the classical instrument and jazz collections, among them an exquisite 1854 Erard piano, purchased by Queen Victoria for Prince Albert and meticulously maintained in Balmoral Castle. NMAH was also able to reunite disparate portions of the Duke Ellington Jazz Archive by acquiring from Ruth Ellington Boatright additional manuscripts, work notes, photographs, films, videos, phonograph discs, and transcription discs. The Museum has been actively collecting important Hispanic crafts from New Mexico, which will be displayed in its Columbus Quincentenary exhibit.

Collections Management - NMAH's primary collections management goal is to reduce documentation backlogs. In FY 1991, temporary Trust-funded staff made major reductions on backlogs in the Numismatics, Photographic History, and Armed Forces History collections. The Museum completed prototypes for the first phase of the new comprehensive Collections Information System (CIS). This system will consolidate temporary collections systems that currently provide limited service into a more responsive, single data base to serve registrars, researchers, and exhibitors.

Collections management staff also concentrated on supporting building renovation work. They relocated more than 21,000 objects within NMAH or transferred them to rented facilities at Fullerton Industrial Park in Springfield, Virginia, now completely filled. Using raised funds, NMAH moved its first collections to the Museum Support Center (MSC) in Suitland, Maryland: 3,000 textile patent models and associated objects. The staff is also preparing to move the Philatelic Collection to the new National Postal History and Philatelic Museum facilities in FY 1993.

Construction began in March 1991 on the Department of Conservation's new Costumes, Textiles, and Fragile Organics Laboratory. In addition to providing state-of-the-art facilities to treat more than 40,000 costumes and textile objects, this laboratory will accommodate rehousing of paper and three-dimensional objects. The Museum also made improvements in security for the Numismatics Collection.

Research - Much of the Museum's research activity complements the Museum's ambitious exhibition schedule. In FY 1991, research took place on the following exhibit topics: everyday life in America in the 18th century; children in American culture, 1945-68; the coming of the age of technology; American quilts; the history of American papermaking; the history of U. S. Army paratroopers; the harmonica in America; and the scientific lecture apparatus of Dr. Charles Cane. Research for upcoming exhibits is under way on American rock 'n' roll, the social history of science, America in the 19th century, and the lives and accomplishments of the First Ladies.

The Museum maintains an active program of research on its collections. These efforts produced more than 100 publications in FY 1991. Two fine examples are richly illustrated books that resulted from research on the American clock collection and on the Kunz Collection of Russian copper icons and crosses.

In another important research project, a team of NMAH specialists responded to a request from the Republic of Guyana to research, examine, and restore selected 19th-century public clocks throughout Guyana. While improving understanding of 19th-century American clock technology, this effort represents the first attempt by NMAH to provide restoration and historical evaluation services on public clocks to the international community.

Exhibitions - Work progresses on the Museum's Master Plan to renovate the building and reinstall its exhibitions. Phase III will be completed in September 1991. The Museum opened 20 new exhibitions in FY 1991, ranging in size from a single case to 10,000-square-foot shows. Of special note is the reopening of "After the Revolution: Everyday Life in America, 1780-1800," which had been temporarily closed. The new exhibit is more accessible to the handicapped, highlights improved sections on the African-American and Seneca Indian experiences, and has been redesigned to incorporate new objects and new research. Other exhibitions of special interest included "Children in American Culture, 1945-1968," which used the Peanuts comic-strip characters to examine children's lives during post-World War II America; "Homeless in America: Three Perspectives," dealing with the plight of the homeless in America as seen from different viewpoints; and "The Photographs of Arthur B. Rickerby: The UPI and Life Years," a selection of images depicting famous people and moments in time that celebrate American history.

Two major permanent exhibitions will open in FY 1992. "First Ladies: Political Role, Public Image" will document the First Ladies' contributions to the Nation's history. While exhibiting the restored First Ladies' gowns, the show explores the personalities, public images, and individual accomplishments of the presidential wives. In observance of the Columbus Quincentenary, the Museum will open "American Encounters." Focusing on the American Southwest, the exhibition portrays the lives of ethnically diverse people striving to preserve their unique cultural identities while competing for scarce resources. In FY 1993, the exhibition, "Land of Promise: America in the 19th Century," will open for public viewing. This exhibition will examine America's past from a perspective that reveals the promise and paradoxes of the new land.

Public Programs - In FY 1991, the Museum developed and presented a wide variety of education activities, publications, forums, special events, and performances to increase public understanding of America's heritage. With recent Congressional funding, NMAH inaugurated its widely acclaimed new jazz performance program. Other free concerts of American music highlighted musical theater and Native-American and Hispanic-American musical traditions. The Museum also initiated the Duke Ellington Youth Project in which NMAH took Ellington's music to Washington, D.C., schools, and students reciprocated by performing at the Smithsonian.

Two examples of symposia held in the Museum were a major conference on women and social reform in the 19th century and a national storytelling festival with teacher workshops. New educational outreach programs included the establishment of a formal partnership with the Duke Ellington School of the Arts to develop a museum studies program for high school students; the establishment of a National Curriculum Project for Science Education being piloted by teachers in Buffalo, New York, and Washington, D.C.; and a cooperative education program with public schools in Taos, New Mexico.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, the National Museum of American History requests an increase of 24 workyears and \$2,102,000 to provide critical storage space and

support for displaced collections (1 workyear and \$195,000); enable the Museum to achieve full collections management accountability (10 workyears and \$400,000); provide funding for mandatory building management initiatives such as trash recycling and hazardous waste removal (1 workyear and \$92,000); secure additional computer hardware and software for curatorial and research support (\$700,000); provide adequate staffing for educational services to increased numbers of Museum visitors (3 workyears and \$150,000); fund a development officer to increase private gifts and grants to the Museum (1 workyear and \$112,000); enable the Museum to complete asbestos removal at its Silver Hill Facility (6 workyears and \$337,000); and provide for ongoing maintenance to computer components of modern exhibitions (2 workyears and \$116,000).

Storage Space and Support for Displaced Collections (1 workyear and \$195,000) - All available storage areas in NMAH are filled, and some are seriously overcrowded. Asbestos still contaminates some of the buildings at Silver Hill. Without storage space for displaced objects, progress cannot continue on three projects: the ongoing renovation and reinstallation of major exhibitions, the takedown of the "1876" exhibition in the Arts and Industries Building, and renovation of asbestos-contaminated buildings at the Silver Hill Facility. These conditions have also forced NMAH to curtail important collecting and reduced the Museum's capacity to use, account for, and care for existing collections.

The Museum needs an additional 12,000 square feet of leased storage space to continue with the above projects and provide for minimum collections growth. The Museum decided to lease space only after exploring and rejecting other options due to costs, security, or inadequate environmental systems.

Requested funds will pay for rental costs of storage space at Fullerton Industrial Park (\$120,000), for storage equipment (\$40,000), and for an on-site manager (1 workyear and \$35,000) to supervise access to objects and oversee proper storage conditions and inventory controls. At present, staff members at the Silver Hill Facility take time away from asbestos removal and other off-site storage support work to make the 50-mile round trip to the Fullerton storage site. The new position will provide greater control at Fullerton, eliminate unnecessary trips, and allow work at Silver Hill to proceed at a faster pace.

An increase in storage space will allow the Museum to continue building renovations and exhibit reinstallations and improve accountability and accessibility of collections held in the public trust.

Collections Accountability (10 workyears and \$400,000) - NMAH has substantial collections documentation backlogs that have been cited by Smithsonian auditors. The Museum has made recent strides in designing a central computer system and creating an accountability plan to meet documentary requirements. However, major building renovation, new exhibition reinstallations, asbestos removal, and other collections projects have contributed to the backlogs. Staff who would normally work on backlogs are being redirected to these projects.

With sufficient staff and funding, the Museum can implement its Collections Management Accountability Plan. This plan, which was created in response to the Smithsonian Institution Inspector General's report, spells out schedules, staff, and other resources needed to achieve control over NMAH's collections of 16 million objects.

Funds requested will allow NMAH to organize, create records and process data for millions of objects. Ten workyears and \$297,000 will support 6 permanent and 4 term (up to five years) museum technicians to eliminate long-standing backlogs. The permanent positions will be flexible and respond to areas of greatest need. The term positions will specifically address urgent problems in sensitive collections. Requested funds of \$68,000 will pay for contract staff to work on large, high-value collections in Armed Forces History and the National Philatelic Collection. An additional \$35,000 will pay for storage and computer equipment and supplies.

Funds requested will allow NMAH to make major progress toward resolving audit deficiencies and provide a sound collections management infrastructure. Greater accountability and accessibility will better serve the public trust.

Building Management and Safety (1 workyear and \$92,000) - Environmental protection and safety issues are a major concern in the 1990s. The Museum is starting several new programs to conserve building resources and provide training and building-wide inspections to resolve safety and health problems quickly. At the same time, new regulations govern hazardous waste removal, water testing, and waste recycling. These regulatory requirements will approximately double the Museum's building management costs by FY 1992.

This request will fund the increased costs of contracts for refuse removal and recycling, hazardous waste removal, waste water analysis, and pest control (\$40,000); supplies for recycling, such as special waste receptacles and improved dispensers for paper products (\$10,000); and a safety coordinator (1 workyear and \$42,000) to supervise a comprehensive health and safety program. The safety coordinator will supervise the Museum's safety, asbestos, radiation, hazardous waste, hazard communication, and respiratory protection programs. The incumbent will inspect facilities, train and evaluate staff, and respond to the Museum's annual Safety Evaluation and Technical Review. This position will ensure that staff follow safety and health procedures.

The Museum can provide a safe and environmentally protected facility. New regulations make this imperative, as does concern for the environment and for the welfare of the staff and the public.

Computer Support (\$700,000) - NMAH's 11-year-old computer system is not adequate to support growing collections management needs and does not provide access to information for researchers or the general public. The proposed new system will replace outdated hardware while achieving collection management goals. It will consolidate older multiple systems, increase available data about collections, speed response time, accommodate researchers and exhibitors, enhance data with images, make information available on compact and video discs, and strengthen accountability and security as recommended in auditors' reports.

The Museum has developed flow charts and computer test programs with simulated data as the basis for determining its collections management hardware and software needs. The Museum will conduct tests and evaluations of two potential data base software systems capable of meeting its needs. These evaluations will enable the Museum to buy appropriate computer hardware and software on which to develop the Collections Information System.

The requested funds will allow the Museum to acquire a mid-size computer to store the collections data base (\$500,000), software for data base management to control the

data and images (\$125,000), and computer networking parts to link the system and the users to the Museum's computer network (\$75,000).

A more efficient computer system is the only way to make information on collections available to all users. The results will be improved resources for exhibitions and research and greater accountability for collections.

Education Programs (3 workyears and \$150,000) - The Education Program of the Museum is seriously understaffed for a national museum with an exhibition program of this size. There is no manager to supervise the weekend interpretive volunteer programs and no school program specialist to update programs and evaluate volunteer docents. The requested increase will provide for those staff and help the Museum meet the heightened public demand for more live interpretation of NMAH exhibits and educational materials relating to exhibit themes.

The Museum has targeted three areas for improvement: the weekend docent program, the demonstration program, and school programs. More than 100 docents in NMAH serve the public on weekends, when visitorship is heaviest. A full-time manager is needed to run this program. Second, research has shown that visitors get the most from their experience when hands-on activities allow them to "learn by doing." Hands-on programs use volunteers to move throughout the exhibitions and interpret themes through dialogue, object handling, and demonstrations of historic machines. Hands-on demonstrations in NMAH now reach only 2 percent of Museum visitors. NMAH wants to raise that figure to 33 percent. Lastly, NMAH seeks to create a museum-school program that brings teachers in from around the country for tours and workshops that will help them interpret NMAH exhibits to their students. Through teacher and student workshops, the Museum will supply unique educational materials and methods not otherwise available to schools.

A weekend program manager (1 workyear and \$35,000) will supervise the volunteers who interpret permanent exhibitions for the public on weekends. A coordinator for demonstration programs (1 workyear and \$42,000) will develop and supervise the museum-wide program of demonstration carts and manage ongoing demonstration centers in exhibitions. NMAH also requests a school program coordinator (1 workyear and \$42,000) to develop and maintain in-museum programs for local and national school groups and an additional \$31,000 for publications, historic reproductions, and supplies.

These educational programs will greatly enhance public understanding of objects by bringing the Museum's exhibitions to life through stronger docent administration and enhanced interactive interpretation of artifacts and historical themes.

Development Support (1 workyear and \$112,000) - Because of increased pressures on the Federal budget, NMAH seeks to expand its ability to raise funds to support the ongoing programs of the Museum. Gifts and grants have allowed the Museum to do the following:

- maintain most outreach efforts, while increasing music programs;
- renew exhibitions so that they are meaningful to wider audiences;
- document disappearing ways of life through oral histories;
- provide needed conservation to American icons.

Currently, fundraising is performed on a part-time basis by the head of the External Affairs Office. Having one full-time individual dedicated to this function will increase the Museum's ability to raise funds two- or three-fold.

The requested funds will support one development officer (1 workyear and \$72,000), travel for solicitation (\$10,000), and professionally produced fund-raising "kits" (\$30,000).

Development offices have become essential components of American museums, including those that are publicly supported. Increased private support will provide budgetary flexibility and allow the Museum to remain a vibrant and responsive national resource through changing economic conditions.

Asbestos Removal (6 workyears and \$337,000) - Since 1985, the Museum has been actively engaged in asbestos removal from buildings and collections at the Silver Hill Facility, where nearly one-half of the general collections of the Museum are housed. Using its current base, the Museum has made substantial progress in addressing this problem. However, it requires additional funding beginning in FY 1993 to accelerate its work. Over 50 percent of the contaminated collections at Silver Hill have been cleaned according to Federal standards, but several hundred thousand untreated objects are currently stored in a heavily-contaminated and deteriorating building. Access to these objects, representing the history of the Nation's science and technology, is restricted due to the hazardous nature of asbestos. Many of the objects have never been catalogued or conserved.

To speed the Museum's asbestos-removal effort for the science and technology collections, additional staff positions are needed to decontaminate and remove objects to other storage locations, while providing inventory controls. These specialists will clean objects according to rigorous health and safety standards as well as conservation requirements. They will create simple automated records for location tracking, providing the basis for later in-depth cataloging.

An industrial hygienist (1 workyear and \$42,000) will oversee cleaning and testing work and ensure safety standards are met. Five additional museum technicians (5 workyears and \$145,000) will clean and test asbestos-contaminated objects, move them to temporary storage, and maintain basic accountability records for location tracking. After rehabilitation of the building, technicians will return the objects to storage. An additional \$40,000 will pay for services of asbestos testing and object crating; \$50,000 will supply cleaning materials and clothing; and \$60,000 will cover testing equipment, respirators, vacuums, and other needed equipment. Work will proceed in coordination with Repair and Restoration of Buildings schedules.

Asbestos removal will redress health and safety deficiencies as mandated by Federal regulations and give the public greater access to a significant number of NMAH collections.

Exhibition Maintenance (2 workyears and \$116,000) - NMAH's modern exhibits include a growing number of technological components. Since NMAH initiated its program to reinstall major permanent exhibitions, six major exhibition halls have been completed, four of which depend heavily on computer technology. Computers control films, interactive video display terminals, automatic doors, optical character readers, visitor input devices, and other modern exhibit methods that are now used to enhance the visitor's experience. The most recent exhibit, "The Information Age: People, Information and Technology," is a good example. It employed more than 130 hardware devices (including 56 personal computers and 2 minicomputers) to run interactive and other audio-visual displays.

The Museum needs additional staff and contractors to maintain computer components and to provide computer upgrades when needed. Funds are also required to replace labels

and displays that need repair or modification, either because of wear and tear or in response to updated research. NMAH will provide the means for the more regular cleaning of displayed objects that is necessary because of heavy dust generated by building renovation work.

Requested funds will provide a computer engineer (1 workyear and \$51,000) to maintain and upgrade the Museum's computer components and an exhibits specialist (1 workyear and \$35,000) to repair labels and cases. An additional \$30,000 will allow the Museum to purchase maintenance supplies and to contract for specialized services to clean fragile objects on display.

Interactive exhibits are an important means for involving the public directly in a learning experience. Proper maintenance will ensure that interactive devices fulfill their many potentials.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - This funding is from various sources, including the Museum's share of museum shop, photo shop, and cafeteria sales; publication royalties; and various annual allotments. In FY 1992, these funds will support the salary and benefit costs for the position of museum director and the Museum's unique chamber music performance and recordings program.

Restricted Funds - The principal sources of income for these funds are individual or corporate gifts and foundation grants provided for specific purposes. In FY 1991, NMAH received a generous grant from the American Chemical Society to support a major exhibition on "Science in America," scheduled to open in 1993. The Occidental Chemical Corporation gave a generous donation in support of an educational outreach program in concert with this exhibition.

The Museum received a generous grant from the state of New Mexico to support the permanent exhibition, "American Encounters," which commemorates the Columbus Quincentenary. The directors of the Lila Wallace-Reader's Digest Fund gave a major planning grant for exhibitions and community outreach on the subject of jazz music.

The Museum also received the following gifts and grants: from Vision 300 in support of the exhibition, "American Papermaking: 300 Years"; from Sony Music Entertainment, Inc., in support of the John Hammond Fund for the Performance of American Music; from Fleishman Hillard, Inc., on behalf of Indianapolis Speedway, to fund improvements in the Road Transportation Hall; from the Brand Names Education Foundation, in support of a proposal to develop a traveling exhibit on commercial imagery and the development of a consumer society; from the Wilson and George Myers Company to support advertising research; from D.C. Comics to fund a symposium entitled "Specializing in the Impossible: Women and Social Reform in America, 1890-1900"; from the Queene Ferry Coonley Foundation, in support of research on 20th-century architecture in Washington, D.C.; from the Lexus Division of Toyota Motor Sales for general support of the Museum's programs; from the American Postal Workers Union to support the design, construction, and installation of exhibits for the new National Postal History and Philatelic Museum; and from the Friends of First Ladies for the restoration of the First Ladies' gowns and the reinterpretation and reinstallation of that exhibit.

A grant was received from the Department of the Army to support the exhibit "G.I.: The American Soldier Experience in WWII."

The Museum also received two generous bequests: from the estate of Dona I. Guimaraes to support the work of the Costume Division, and from the estate of Edward J. Orth to maintain the Edward J. Orth Memorial Archives of the New York World's Fair, 1939-1940.

NATIONAL MUSEUM OF THE AMERICAN INDIAN

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	101	7,142	1	150	-	-	-	-	-	-
FY 1992 Estimate	165	13,962	2	266	-	-	-	-	-	-
FY 1993 Estimate	187	14,256	2	266	-	-	-	-	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The National Museum of the American Indian (NMAI) provides the Smithsonian Institution with a new and significant vehicle to communicate with American Indian people and the public through its collections, research, and public programs. NMAI houses a collection devoted exclusively to the history and art of cultures indigenous to the Americas. The Museum plans to offer a full range of programs demonstrating the historic and contemporary contributions of native peoples of the Western Hemisphere. Future facilities will include a museum on the Mall east of the National Air and Space Museum; an exhibition and education center in the United States Custom House in New York City; and a collection, study, and research facility adjacent to the Museum Support Center in Suitland, Maryland.

For FY 1993, NMAI requests an increase of 22 workyears and \$2,292,000 for planning and coordination (7 workyears and \$710,000); repatriation (9 workyears and \$793,000); operation of the New York facilities (3 workyears and \$273,000); technology for the education program (3 workyears and \$496,000); and support of the Board of Trustees (\$20,000). These increases are offset by reductions of \$298,000 in costs relating to the National Campaign and \$1,700,000 in one-time funding for Custom House furnishings and equipment. In addition to the increases cited above, the Smithsonian seeks funding for staffing and support costs for the Office of Design and Construction for work relating to the design and construction of NMAI projects proposed for FY 1993. This request is justified under the Office of Design and Construction line-item.

PROGRAM - The Museum of the American Indian, Heye Foundation, located in New York City, opened its doors to the public in 1922. The Museum's founder, George Gustav Heye, initiated the collection near the turn of the century as a result of expeditions in this country and in Ecuador, Mexico, the West Indies, the Amazon, and Central America. The collection is one of the world's richest assemblages of artifacts of the indigenous cultures of the Western Hemisphere. Its North American Plains material forms one of the largest groupings found anywhere. The collection represents the great civilizations of the Inca, Aztec, and Maya, as well as the native cultures of the Amazon and the Arctic. The collection includes a photographic archives with more than 80,000 negatives and prints

chronicling Indian life. The Heye Foundation Collection was transferred to the Smithsonian Institution on June 24, 1990, to form the base of the National Museum of the American Indian.

The mission statement for the National Museum of the American Indian states that, in consultation and collaboration with Native Americans, the Museum will advance knowledge and understanding of native cultures of the Western Hemisphere, including art, history, and language. Through innovative public programming, research, and collections, the Museum will recognize its special responsibility to protect, support, and enhance the development, maintenance, and perpetuation of native cultures and communities.

In 1991, the Institution established a National Campaign Office for NMAI to plan and implement a national fund-raising campaign to secure the required matching funds from non-Federal sources as specified by the legislation authorizing establishment of the National Museum of the American Indian.

NMAI continues to offer the public a full range of museum programs at the current Audubon Terrace location in New York while preparing for its 1993 public opening in the George Gustav Heye Center in the United States Custom House in New York City. By 1993, having finished a series of consultations across the United States with Native Americans and museum experts, architectural program planning will be completed and the architects selected for the collection, study, and research facility to be built in Suitland, Maryland, and the new museum on the Mall.

Exhibitions - Three exhibitions, each originated wholly or in part by NMAI, will open simultaneously in 1993 at the George Gustav Heye Center in the Custom House. "Celebrations" is a group work including 25 Native American artists, each proficient in a different art form. "Points of View" will present objects selected from the Heye Collection by 30 Native Americans, including ten from Central and South America, whose comments on the objects will be included in the presentation. The third exhibition, "Shared Visions," will be borrowed from the Heard Museum in Phoenix and will be accompanied by ancillary educational material developed by NMAI. The design and production of these exhibitions, as well as an orientation exhibit, will continue through FY 1992 and early FY 1993.

Outreach - The Native-American community has placed primary importance on the development of NMAI's outreach program. At present this program has three parts: Native American staff development and training; professional museum training courses conducted by the Office of Museum Programs at regional training sites in Native American communities; and consultations held by NMAI with different segments of the Indian and non-Indian professional community.

Ten Native Americans are currently on staff in training positions at NMAI. The Smithsonian is seeking approval of an additional three positions from Congress for FY 1992. The Office of Museum Programs conducted three regional training programs in FY 1991 and expects to add another two sites with funds requested in FY 1992.

NMAI held 11 consultations in FY 1991, with more than 25 attendees at each. The focus of the 1991 consultations was architectural program planning for the Suitland and Mall buildings. Future consultations will review and revise the plans developed by the architect and review and further define the overall outreach program.

Aspects of NMAI's program that also reflect the emphasis on outreach to the national and international Native American community include the Film and Video Program's Biennial Film Festival, currently held in New York, which will travel to Native American communities. The Museum will also develop a traveling exhibition program for Native American cultural centers and tribal museums across the country. NMAI will conduct this program in collaboration with the staff of the Smithsonian Institution Traveling Exhibition Service (SITES). In addition, planning for an international program will begin in FY 1992 to assure that the indigenous cultures of Mexico and Central and South America are properly represented in all aspects of NMAI's program.

National Campaign - The National Campaign is seeking donations to support one-third of the construction cost of the National Mall facility. Its Office has been established in donated space. The Office coordinates all fundraising, membership, public relations, and special events activities for the National Campaign. An Honorary Committee for the Campaign has been formed, and a volunteer leadership group, the International Founders Council, is being recruited. The Campaign initiated a membership program in March 1991, and as of August 1991 more than 15,000 members had been recruited.

Collections Acquisition - During FY 1991, the collection was enhanced by the addition of 623 artifacts through gifts or bequests from 15 donors. One of the largest donations was a group of more than 150 ethnographic items from the Great Plains and Eastern Woodlands. NMAI also received a gift of Central and South American textiles and other objects accompanied by photographs and field notes. In addition to artifacts, the Museum also received gifts of photographs, archival documents, films, and videotapes.

Collections Management - In 1991, the Institution will complete the 3,000-square foot annex to the New York Research Branch that will serve various collection needs. The addition will house a conservation laboratory, a preparation area for artifacts destined for new exhibits in the Custom House, and offices for collections management staff. Plans are under way to move the objects held in storage at the Audubon Terrace facility to the Research Branch in early FY 1992. Other collection management projects include conservation of 30 Navajo textiles and of artifacts for loan to other museums in 1992, rehousing of the glass-plate negative collection and 5,000 lantern slides, and preparation of a data base for the photo archive collection of more than 100,000 photographs.

To assist with collections management needs associated with the exhibition program at the Custom House, as well as to begin planning and implementing the move of the entire collection of about one million objects to Washington, D.C., the Museum added a total of 13 positions to its conservation, registration, and collections management staff in FY 1990 and FY 1991.

Research - Research continues on Zuni ethnographic and archeological material from the Hawikku site. The curatorial staff, with the assistance of tribal members, is documenting the Apache artifacts in the collection. Research is also under way on the material culture of the Tlingit, Kuskokwim, Navajo, and Seminole. A survey and assessment of current community-based research on cultural preservation occurring in tribal museums are expected to be completed in early 1992. Survey results will provide invaluable information to the staff planning the overall research program for the Museum.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, NMAI requests an increase of 22 workyears and \$2,292,000 for planning and coordination (7 workyears and \$710,000); repatriation (9 workyears and \$793,000); operation of the New York facilities (3 workyears

and \$273,000); technology for the education program (3 workyears and \$496,000); and support of the Board of Trustees (\$20,000). These increases are offset by reductions of \$298,000 in costs relating to the National Campaign and \$1,700,000 in one-time funding for Custom House furnishings and equipment. In addition to the increases cited above, the Smithsonian seeks funding for staffing and support costs for the Office of Design and Construction for work relating to the design and construction of NMAI projects proposed for FY 1993. This request is justified under the Office of Design and Construction line-item.

Planning and Coordination (7 workyears and \$710,000) - In FY 1993, the Museum will continue to define and develop specific program areas for all Washington, D.C., and New York facilities.

The following staff members will advance planning and coordination (7 workyears and \$275,000) for NMAI in FY 1993. An assistant publication manager and an editor will create and produce printed material such as exhibition catalogues, visitor information brochures, and curriculum materials. A senior-level education specialist will join the public programming staff to develop a variety of programs that reflect the perspectives of the American Indian community. An assistant to the deputy director will serve as NMAI representative to the Office of Design and Construction on matters pertaining to the design and construction of the Suitland and Mall facilities. In addition, a secretary and two administrative technicians will provide assistance to the Public Programming and Administrative departments. NMAI seeks funds for travel, supplies, rent for office space, and contract services of Native American advisors and other technical assistance (\$435,000).

NMAI will be unique in many respects within the Smithsonian family of museums. With planning and coordination, NMAI's rich collections will permit development of a truly unparalleled series of traveling exhibitions, training opportunities, and opportunities for scholarship.

Repatriation (9 workyears and \$793,000) - NMAI's repatriation policy is the most far-reaching of any museum in the United States. The policy commits the Museum to the disposition of the following to culturally affiliated Indian tribes, groups, and individuals, in accordance with the wishes of culturally based Native Americans: Native American human remains of known individuals, funerary objects, communally owned native property, ceremonial and religious objects, and objects transferred to or acquired by the museum illegally.

With the funds and positions provided in FY 1991 to begin a Native American Collection Documentation program, the Institution established a repatriation program in the National Museum of Natural History. The Board of Trustees of the National Museum of the American Indian developed a repatriation policy, discussed above, in 1991 that was specific to NMAI. This policy set substantive parameters and an overall process for addressing repatriation claims with respect to limited categories of materials in NMAI's collection. For FY 1992, the Museum, in close collaboration with the Board of Trustees, will continue to develop the specific procedures necessary to implement the policy.

The resources requested for FY 1993 will enable NMAI to hire an administrator to provide overall direction for the Museum's repatriation program as well as an assistant, a photographer, conservator, conservation technician, two research assistants, and two clerical support positions to carry out this program (9 workyears and \$363,000). Additional funds requested for FY 1993 will provide office and research supplies and

equipment, travel to consult with tribal representatives, the conservation and photography of collection material, and such contract services as may be required (\$430,000).

NMAI's director has stressed the importance of implementing the Institution's repatriation policy as an integral part of developing the Museum's programs: "It is about keeping faith with this country's native community. It is about promises made and promises honored. It is about returning to the native peoples of this country those vital materials that have sustained them and their brilliant culture through the ages and to this very day. And it is about building a sharing, collaborative future relationship with the contemporary descendants of those who made the splendid materials in the Museum's remarkable collection." It is important that this policy and program receive the highest level of support.

New York Program Support (3 workyears and \$273,000) - The first and second floors of the United States Custom House in New York will house the George Gustav Heye Center, an extension of the National Museum of the American Indian, designed to house exhibitions, educational programs, and other public services. As the opening of the Center approaches, the Institution needs additional positions to complete the staffing plan for this New York facility.

The Film and Video Program, currently based in New York, is expected to become an important aspect of the Museum's national outreach initiative, but it will continue to have an important presence at the Custom House. Funds requested for FY 1993 will support the addition of an assistant film and video coordinator who will be responsible for the on-site program at that location (1 workyear and \$46,000). Adult education programs such as lunchtime seminars and after-work symposia will attract attendance by those employed in this area of New York City. The FY 1993 increase will permit the Museum to hire an education specialist to develop and maintain a continuing audience in the local adult community (1 workyear and \$46,000). Funds are also requested to support travel, supplies, and equipment in support of the Film and Video and Adult Education programs (\$50,000).

NMAI is seeking funds for FY 1993 to support an assistant facilities manager with responsibility for maintenance of the Research Branch and Annex located in the Bronx (1 workyear and \$46,000). Funding is also sought to rent temperature-controlled storage for NMAI's valuable photographic collection when the Smithsonian relocates the collection from the Audubon Terrace facility prior to its transfer to Washington, D.C. (\$85,000).

Through these planned efforts of exhibitions, public programming, and technology, New York City will have the benefits of a world-class museum, accessible in ways never before possible.

Technology for the Education Program (3 workyears and \$496,000) - A crucial aspect of NMAI's education program will be to use the most advanced technology available to link tribal museums and Native American cultural centers with the services NMAI can provide. NMAI will endeavor to apply state-of-the-art technology to meet these needs.

Planning began in FY 1991 and will continue through FY 1992 for the use of technology as part of on-site and off-site education programs, in exhibition galleries, and media productions, and as administrative support through an information management system. With funds requested for FY 1993, the Museum will hire two specialists with media technology expertise for NMAI's education programs as well as a position to provide clerical support for the technology staff (3 workyears and \$161,000). Additional funds requested for

FY 1993 will provide office supplies, computer equipment, travel to off-site locations, and contract support for pilot projects in Indian communities (\$335,000).

The Institution's goal for this Museum is to create a place where Indian culture is represented as a continuum, not a snapshot of a romanticized past as often presented in traditional museums. NMAI intends to be a contemporary, innovative museum by employing the technology required to fulfill its mission.

Board of Trustees (\$20,000) - Congress mandated that the Smithsonian establish a Board of Trustees for NMAI to advise and assist the Board of Regents on concerns relating to the administration, operation, maintenance, and preservation of the National Museum of the American Indian; adopt a set of by-laws and recommend annual operating budgets for NMAI to the Board of Regents; and report annually to the Board of Regents on matters of acquisition, disposition, and display of Native-American objects and artifacts.

Responding to this mandate, the Board of Regents appointed a 25-member board, which began its term in June 1990. Current board members reside in Mexico and in various locations within the contiguous United States, as well as in Alaska. In addition to four regularly scheduled board meetings, board members serve on standing committees that meet several times each year, often at dates and locations separate from the full board meetings. NMAI requests \$20,000 in FY 1993 to support travel expenses associated with these additional committee meetings for its 25-member board.

NMAI will become a living institution dedicated to the collection, preservation, study, and exhibition of American-Indian languages, literature, history, art, and culture. The efforts of its distinguished board will ensure that the goals of NMAI are met: to showcase the philosophical and intellectual continuity of Native-American cultures, emphasizing values that are inherently Indian and that merit renewed appreciation today.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - The Smithsonian has established allotments to cover the Trust portion of the National Campaign costs and the director, the deputy director, and the National Campaign director's salaries and support costs in addition to an unrestricted account to receive income from the National Museum of the American Indian's National Campaign, which began in January 1991. The George Gustav Heye Center of NMAI also receives income from museum shop sales, admissions, and donations. Investment income will be available from the permanent endowment of the Heye Foundation, which was included in the property transfer.

Restricted Funds - In FY 1991, the Museum received a grant from the Merck Family Fund in support of the publication that will accompany the inaugural exhibition at the George Gustav Heye Center of NMAI.

NATIONAL MUSEUM OF AMERICAN ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	124	6,883	1	204	-	690	-	1,019	-	-
FY 1992 Estimate	125	7,212	1	219	-	349	-	1,044	-	-
FY 1993 Estimate	133	8,225	1	219	-	407	-	1,007	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The National Museum of American Art (NMAA) seeks to represent the finest achievements of American visual artists working in painting, sculpture, the graphic arts, photography, and crafts. The Museum presents diverse art from all regions, traditions, and cultures in America, including folk as well as fine art, through major loan exhibitions and related educational programs for public and scholarly audiences. The Museum fosters research nationwide through fellowship and intern programs, and it maintains automated data base inventories as a resource for American art scholars. The scholarly staff publishes new research in books, articles, and catalogues for the purpose of underscoring the relationship of art and history. The Renwick Gallery, part of the National Museum of American Art focuses on American crafts and decorative arts. NMAA also maintains the Barney Studio House, a period home open for tours and interpretive programs.

For FY 1993, NMAA requests an increase of 7 workyears and \$987,000 for cultural pluralism initiatives and curatorial support (2 workyears and \$241,000); education programs (2 workyears and \$200,000); minicomputer replacement (\$200,000); the establishment of a development office (2 workyears and \$161,000); reinstallation of permanent exhibit halls (\$150,000); and collections management (1 workyear and \$35,000). The NMAA also requests the retention of \$1,000,000 first appropriated in FY 1991 to continue the Save Outdoor Sculpture program in FY 1993. As a joint request with the National Portrait Gallery (NPG), NMAA also requests 1 workyear and \$51,000 for a safety specialist for the American Art and Portrait Gallery Building's Office of the Building Manager.

PROGRAM - The National Museum of American Art explores the contributions of the Nation's artistic heritage from the 18th century through the present. Through a multi-faceted program of acquisitions, exhibitions, research, publications, and education, the Museum presents and interprets American art for a broad and diverse public.

Collections - The Museum's collections, numbering more than 35,000 objects, encompass paintings, sculpture, graphic art, photography, folk art, and contemporary crafts from the 18th century to the present. Especially strong in works by African-American artists, the Museum has added to these holdings Stagger Lee by Frederick Brown, a large canvas by Henry

Ossawa Tanner, and ten photographs by Roland Freeman. The Museum's 19th-century collection was enhanced by the acquisition of a decorative panel created by John La Farge and Augustus Saint-Gaudens for the Cornelius Vanderbilt mansion in New York, as well as a large group of drawings by Miner Kellogg, one of the earliest American artists to travel to the Middle East. Thomas Hart Benton's seminal 1967 painting Wheat and Beverly Pepper's Ternana Wedge are important additions to the 20th-century collection. Through the generosity of Consolidated Natural Gas Company Foundation, the Museum has acquired a unique collection of contemporary landscape photographs, which NMAA will present as an exhibition and then as a tour. Larry Fuente's Game Fish and a spectacular pendant necklace by Albert Paley represent significant additions to the Renwick collection of contemporary American crafts.

Exhibitions - Among the 14 exhibitions on view during FY 1991 at the Museum and its Renwick Gallery, several stand out. "The West as America: Reinterpreting Images of the Frontier, 1820-1920" sparked nationwide debate by presenting new viewpoints concerning westward expansion. "Homecoming: William H. Johnson and Afro-America, 1938-1946," drawn mainly from the Museum's collection, offered a major selection of this artist's work, many recently conserved and seen by the public for the first time in the context of African-American history and culture. "Tokens of Affection: The Portrait Miniature in America," co-organized by the Museum and the Metropolitan Museum of Art in New York, was the first major exhibition of portrait miniatures in several decades. The Museum also presented exhibitions of the works of Childe Hassam, Winslow Homer, Joseph Stella, and Eadweard Muybridge, as well as three contemporary Cuban-American artists. The Renwick Gallery featured a major retrospective of fiber artist Lenore Tawney, an exhibition of contemporary African-American quilts, and installations by contemporary artists working in glass.

Projected exhibitions under development include "Between Home and Heaven: Contemporary American Landscape Photography" of recently acquired works purchased with funds provided by the Consolidated Natural Gas Company Foundation, an exhibition of Thomas Cole paintings intended to reveal Cole's major artistic and social concerns, and a Columbus Quincentenary exhibition, "Revisiting the White City: American Art at the 1893 Chicago World's Fair," which will bring together paintings and sculpture selected for the 1893 World's Fair that represented the finest achievements of America's visual artists during the late 19th century.

Research - The Museum combines programs for professional training and scholarship with resources for advanced research. In FY 1991, the Intern Program marked its 23rd year with an increasing emphasis on multi-cultural programming for museum professionals and graduate and undergraduate students. The Fellowship Program hosted 30 pre- and post-doctoral research fellows from Europe and across the United States who worked on a wide variety of topics in American art and culture.

The Museum continues to offer unparalleled research resources in American art. In FY 1991, its library implemented an automated circulation system for better collections control and continued indexing of the unique Perret Research Library of California Art. The Photographic Archives added more than 10,000 new images from the Peter A. Juley & Son Collection and completed printing the collection of another major art photographer, Walter A. Rosenblum.

The Museum has transferred the Inventory of American Paintings a data base of 258,000 paintings nationwide, to a new on-line interactive computer system. It is available at each of the Archives of American Art's regional centers and serves nearly 3,000 users

annually. Scheduled to open to the public in 1992, the Museum's newest data base, the Inventory of American Sculpture, added 11,000 new entries and 2,000 images. The Save Outdoor Sculpture (SOS!) program moved forward with the development of a training program and a pilot survey in Tennessee, Illinois, and West Virginia.

Publications - The Museum's scholarly journal, renamed American Art (co-published with Oxford University Press), was "relaunched" with a special double issue highlighted by an array of new features.

Several publications have recently been published or are now in production. Homecoming: The Art and Life of William H. Johnson, a major critical biography of the noted African-American painter, was co-published with Rizzoli. Also in production are a children's book based on Johnson's work (Rizzoli) and a videocassette on Johnson's life and work (Reading and O'Reilly). With the University of Washington Press, NMAA inaugurated a new Renwick Contemporary American Craft Series, co-publishing two books that accompany exhibitions at the Museum's Renwick Gallery: Albert Paley: Sculptural Adornment documents the early work in jewelry of one of America's preeminent craft artists, while John McQueen: The Language of Containment explores the expressive basketmaking of this innovative artist.

Future book projects include Between Home and Heaven: Contemporary American Landscape Photography (1991) and Revisiting the White City: American Art at the 1893 Chicago World's Fair, both of which accompany major exhibitions at NMAA.

Drawing on images from NMAA collections, the Museum is co-producing calendars focusing on African-American artists, crafts, masterpieces of American art, and gardens. Postcard books have been published on Harlem, American art, photographs from the Museum's Juley Collection, African-American art, and American landscape photography. Also forthcoming are a coloring book (Running Press), an anthology of "American Beauties" (Abrams), an edition of The Rubaiyat of Omar Khayyam (illustrated with Elihu Vedder's drawings), and a collection of 350 portraits of American artists from NMAA's Juley Collection. Free within Ourselves, which describes the work of 30 African-American artists in the Museum's collection--with biographies, essays, and illustrations--will be published in 1992.

Education - The Museum continues to make concerted efforts to increase the diversity of its audiences through public programs, community outreach and collaboration, docent recruitment, and special school programs such as D.C. Chapter 1 student multi-visits, career awareness seminars, and special tours. The Museum has also designed programs and tours specifically for the handicapped. Interpretive programs include symposia, lectures, demonstrations, family days, family and teacher workshops, storytelling, performances, concerts, films, and the expansion of gallery label texts. Highlights of activities in FY 1991 were a scholarly symposium, artists' demonstrations, and a Folk-Arts Family Day held in conjunction with the exhibition "Made with Passion: The Hemphill Folk Art Collection." Programs designed for "The West as America" included a panel discussion, dramatic readings, lectures, a public issues forum, and an educators' open house. In cooperation with its neighboring Chinese community, the Museum sponsored a Chinese New Year performance on its front steps and participated in the neighborhood parade commemorating this festive occasion.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, NMAA requests an increase of 7 workyears and \$987,000 for cultural pluralism initiatives and curatorial support (2 workyears and \$241,000); education programs (2 workyears and \$200,000); minicomputer replacement (\$200,000); the establishment of a development office (2 workyears and

\$161,000); reinstallation of permanent exhibit halls (\$150,000); and collections management (1 workyear and \$35,000). The NMAA also requests the retention of \$1,000,000 first appropriated in FY 1991 to continue the Save Outdoor Sculpture program in FY 1993. As a joint request with the National Portrait Gallery (NPG), NMAA also requests 1 workyear and \$51,000 for a safety specialist for the American Art and Portrait Gallery Building's Office of the Building Manager.

Cultural Pluralism Initiatives and Curatorial Support (2 workyears and \$241,000) - As the Nation's leading museum devoted to its own artists, the National Museum of American Art should set the standard for inclusiveness, reversing the "art of exclusion" that has plagued American museums from their beginnings. The Museum seeks to define the scope of American art and establish diversity as a standard.

The only effective means of presenting pluralism in the Museum is through its staff and collections. The Museum already has a fine collection of art by traditionally underrepresented ethnic, economic, and regional groups, but key works are missing that are now beyond the Museum's ability to purchase. Competition among museums for the best works by such groups is especially keen as more museums recognize deficiencies in their collections. The Museum's current level of funding for purchasing works of art, hiring curators, and supporting their curatorial activity is not adequate to acquire the appropriate works for the collection and to develop accompanying program opportunities.

With the requested funding, NMAA will increase its acquisition budget (\$100,000), hire two curators with areas of expertise that are underrepresented on the staff (2 workyears and \$111,000), and support increased curatorial travel for the purpose of adding works by minorities to the collection (\$30,000).

The collections of the Smithsonian Institution represent the Nation's cultural patrimony. At the National Museum of American Art, in particular, this means that the artworks in the collection and their presentation and interpretation through research, exhibition, and programming must highlight as many cultural strata of the Nation as possible.

Education Programs (2 workyears and \$200,000) - Education programs offer the most immediate opportunities for a public art museum in the 1990s. There is an increased interest in American art among schoolchildren, families, lay adults, and scholars nationwide. In recent months, this heightened interest has been reflected in a marked increase in visitor attendance at the Museum, even as overall visitation to most other Smithsonian museums was declining. A recent survey conducted at the Museum showed that most of its visitors were from outside of the Washington, D.C., area.

The Museum must target education programs for multiple audience levels and national constituencies through new technologies and wide dissemination. With the requested increase, the Museum will produce short films, videos, teachers' workbooks, and course materials on American art, frequently using themes and images based on exhibitions organized by NMAA. The Museum will test these materials locally and then distribute them nationally through a carefully prepared system.

With the requested funds, the Museum will hire two education specialists (2 workyears and \$93,000) with emphasis on minority viewpoints to ensure diversity in educational perspectives; develop and present program events; and research, produce, and disseminate short videos and films (\$107,000).

With the existing funding level and current skeletal staff, the Museum is able to do no more than maintain a minimal level of local programming, in much the same fashion as a local museum. In recent years, this programming has been very successful in attracting visitors to the Museum, but it can serve only those who are in or come to Washington. It cannot reach the national audience that the Museum aspires to serve and cannot adequately respond to the public's thirst for knowledge of its visual heritage.

Replacement of Minicomputer (\$200,000) - Fundamental to the Museum's mission of national outreach is the availability of information in its several computer data bases. The replacement of the existing obsolete minicomputer with a modern computer network will set the stage for greater public access to the Museum's unparalleled research resources in American art and ensure compatibility with shared systems at the Smithsonian. A modern computer network is essential in the 1990s for administrative communication and control.

The Museum has a three-step, long-range plan for replacing the existing system. The first phase--implemented in recent years as funding allowed--is replacing terminals and old computers that are incompatible with current software and networks. With the requested increase, the Museum will proceed to the second and third phases by installing network cabling and replacing the shared computer processors and printers, as well as training staff on the new equipment throughout the replacement process.

With the additional funding, the Museum will purchase and install network cabling (\$60,000); purchase central processors (\$85,000) and necessary software (\$50,000); and provide installation and training that are beyond the capabilities of existing staff (\$5,000).

The automated research resources of the Museum are internationally known. They are available, however, to only a fraction of their potential audience because of the Museum's inadequate and outdated computer system. New computer equipment will provide research access to information on the 35,000 objects in the permanent collection, 127,000 items in the Peter A. Juley & Son Collection of photographs, and more than 70,000 items in the photograph archives. The replacement will address more mundane concerns as well--not the least of which is the fact that existing computers are incompatible with planned central automation efforts at the Smithsonian and are no longer supported by the manufacturer.

Development Office (2 workyears and \$161,000) - As a national museum, NMAA needs to widen the scope of the audiences it reaches, not only with funding through the Federal budget process but also with funds raised privately. To achieve this goal, NMAA must aggressively pursue all possible financial opportunities with foundations, corporations, and individuals.

Long overdue at the Museum is a development office dedicated solely to raising funds to support museum programs and exhibitions. The functions of this office will include identifying funding priorities, creating and pursuing strategies for funders, developing and submitting grant proposals, and establishing and cultivating personal contacts with potential donors.

With the requested funding, the Museum will hire a development officer and a development assistant (2 workyears and \$101,000) and provide all the necessary travel, equipment, and miscellaneous support needed for the fund-raising operation (\$60,000).

The absence of any significant Federal budget increases for general NMAA operations in the past few years now makes the Museum more dependent on alternative sources of funding. Many fundamental museum activities, including most major exhibition support, must now come from Trust sources, for which the competition is strong. In each of the past two fiscal years, the Museum has raised more than \$800,000 with no full-time staff dedicated to fundraising. Much more can be done with professional full-time staff working in a concerted effort on development.

Reinstallation of Permanent Exhibit Halls (\$150,000) - The Museum has a responsibility to visitors in both the Patent Office facility and its Renwick Gallery to provide a fully representative survey of American art and crafts. Many of the collections received by gift over the past eight years have never been integrated into the permanent collection galleries. Improvements must be made in these permanent displays through enhanced gallery space and improved visitor access by means of a modern orientation gallery.

At the Renwick Gallery, reinstallation of some changing exhibition halls as permanent galleries will permit the Renwick to double the space available for display of its growing collection of contemporary American crafts. At the Patent Office facility, the lobby will be redesigned to provide updated visitor orientation services, and gallery space will be enlarged and renovated.

The requested funding (\$150,000) will be used for contractual services and materials for design and space reconfiguration.

The Museum strives to provide all visitors the opportunity to find self-relevant meaning in the art of America through the Museum's permanent exhibitions. Since the last major renovation of the permanent exhibit halls in 1984, the needs and interests of the museum-going public have changed with the times. The presentation of the collections must change to meet those needs.

Collections Management (1 workyear and \$35,000) - Each year the Museum loans approximately 1,500 objects from its collections to other organizations, and nearly 1,000 objects are added to the Museum's permanent collection. In recent years, these have included many large, three-dimensional folk art objects and sculptures. However, in the same period, the size of the staff to handle these objects has remained static. The Museum has a custodial obligation to track, maintain, and store its national collection responsibly.

The additional funding will allow the Museum to maintain the current pace of entries with its automated loan-tracking system, which monitors objects loaned to other organizations, and to staff the new permanent collection storage area currently under construction in the Museum's G Street attic.

With the requested funding, the Museum will hire a museum specialist (1 workyear and \$35,000) with day-to-day oversight of all Museum storage areas to ensure proper handling, facilitate use of the permanent collection by staff and other scholars for research purposes, and monitor the loan-tracking system.

As the Museum's collections continue to expand, greater attention and more sophisticated collections management techniques are vital to the preservation of the Museum's irreplaceable artworks.

Safety Specialist (1 workyear and \$51,000) - The National Portrait Gallery and the National Museum of American Art, which share space in the Old Patent Office building, are facing newly established legal and administrative health and safety requirements. Potential safety hazards to the public and staff must be addressed through specialized guidance, which so far has been supported only by diverting resources from other, previously approved building management activities. Increased attendance in the Old Patent Office facility, the Renwick Gallery, and the Barney Studio House, together with the newly mandated programs, makes the continuation of this reprogramming impossible.

The funds requested will pay the costs of a full-time safety specialist. This position will enable the two museums to organize and permanently implement the health and safety program required to ensure compliance with all regulations and guidelines.

The full-time service of a safety specialist is crucial in light of increasing Smithsonian-wide efforts to improve safety, fire protection, and environmental management programs.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - The Museum's Exhibition Sharing Fund, which generates income through fees charged to borrowers of touring exhibitions, financed the 1991 tours of six exhibitions to 17 locations in the United States and abroad. Royalty income from museum publications contributed to the production of the William H. Johnson exhibition catalogue and children's book.

Restricted Funds - In FY 1991, gifts from Mobil Oil and IBM made possible the highly popular exhibitions of the works of Winslow Homer and Childe Hassam respectively. Both exhibitions brought record numbers of visitors to the Museum, including the First Lady, who enjoyed a tour of the Childe Hassam exhibit. Significant new gifts for the purchase and exhibition of collections were also received from the Consolidated Natural Gas Company Foundation, U.S. West, and several individuals. Funds earned from the Luisita L. and Franz H. Denghausen endowment helped the Museum acquire Thomas Hart Benton's painting Wheat.

NATIONAL PORTRAIT GALLERY

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	89	4,421	-	42	-	68	-	802	-	-
FY 1992 Estimate	90	4,748	-	42	-	101	-	400	-	-
FY 1993 Estimate	95	4,931	-	42	-	104	-	605	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The National Portrait Gallery (NPG) is dedicated to the exhibition and study of portraits of people who have made significant contributions to American history and culture and to the study of the artists who created such portraiture. The Gallery sponsors a variety of scholarly and public activities for audiences interested in American art.

For FY 1993, NPG requests an increase of 5 workyears and \$158,000 for curatorial support staff and travel (2 workyears and \$74,000); for administrative support staff (2 workyears and \$58,000); and for the senior citizens outreach program (1 workyear and \$26,000). As a joint request with the National Museum of American Art (NMAA), NPG also requests 1 workyear and \$51,000 for a safety specialist for the American Art and Portrait Gallery Building's Office of the Building Manager. This request is justified in the NMAA narrative.

PROGRAM - The National Portrait Gallery explores the heritage and accomplishments of the American people by collecting, researching, and exhibiting portraits in all media as both historical and artistic documents.

Collections Acquisitions - In FY 1991, the Gallery added 251 objects to its holdings, including 34 Time magazine covers given by Time, Inc. Important paintings added by gift included portraits of William James by John La Farge, Arnold Palmer, and Elvis Presley. A pastel of President John Quincy Adams by Isaac Schmidt and paintings of James Kent by Charles Willson Peale, the Methodist minister Francis Asbury, and Admiral Richard Byrd were purchased.

NPG acquired one hundred and one portraits by renowned photographer Arnold Newman through a gift/purchase arrangement. Other significant photographic acquisitions included a triptych portrait of composer Igor Stravinsky by Richard Avedon; a dramatic image of African-American dancer and choreographer Pearl Primus by Lisette Model; a ca. 1851 daguerreotype of Thomas U. Walter, then architect of the U.S. Capitol; and a rare autochrome of J. P. Morgan, ca. 1912.

The Gallery also acquired drawings of Albert Gallatin by Georges Braque and Fernand Leger, a watercolor of H. L. Mencken by Al Hirschfeld, and gouache drawings of Fiorello La Guardia and Al Smith by Paolo Garretto. Gifts included a watercolor of the poet laureate Mark Strand by Philip Pearlstein and a pencil sketch of Hart Crane by Gaston Lachaise.

A grant from the Smithsonian Women's Committee funded the acquisition of a major microfiche source, Black Biography, 1790-1950.

Collections Management - A Smithsonian grant funded the production of preservation negatives and prints from original Mathew Brady glass-plate negatives in the Gallery's Meserve Collection.

The Registrar's Office began to computerize inventory records for off-premises storage. By the end of 1991, approximately two-thirds of the collection inventory will be on computer data bases. The Gallery made approximately 55 loans to 20 borrowers, including traveling exhibitions in the United States and Canada. The NMAA/NPG Library has implemented the SIBIS Automated Circulation system for better collections control.

Research - Completing its field survey of major portrait collections in Missouri and continuing to catalogue portraits in New York City and the Washington metropolitan area, the Catalog of American Portraits (CAP) added more than 4,000 new portrait records to its computer data base. Data about portraits in Smithsonian bureaus and other Federal agencies and from collections in the southern states were updated. CAP was awarded grants to survey portrait collections in Texas and American Indian and Hispanic portraits in New Mexico.

The Peale Family Papers Project continued its work on volume 4 of the selected papers; on volume 5, Charles Willson Peale's autobiography; and on the catalogue raisonne of Rembrandt Peale's work.

Exhibitions - Opening November 1990, "Old Hickory: A Life Sketch of Andrew Jackson" was the final exhibition celebrating the bicentennial of the Constitution. Co-organized with the Tennessee State Museum, it was sponsored in part by the Tennessee General Assembly.

"Camera Portraits: Photographs from the National Portrait Gallery, London, 1839-1989," opened in February 1991 and was sponsored by Mobil Corporation. Including likenesses of distinguished British personalities from NPG's sister institution in London, the exhibition illustrated the development of portrait photography from the age of the daguerreotype to the present day.

"Magical Mixtures: Marisol Portrait Sculpture," on view from April to August 1991, was the first museum exhibition devoted to the portraits of the Venezuelan-American sculptor Marisol Escobar. Included were portraits of John Wayne, Georgia O'Keeffe, Lyndon Johnson, and Bishop Desmond Tutu.

"Annie Leibovitz Photographs, 1970-1990," jointly organized by the National Portrait Gallery and the International Center of Photography in New York and sponsored by American Express Foundation, surveyed 20 years of her work for Rolling Stone, Vanity Fair, and other journals. When it opened in April 1991, it immediately became the most popular exhibition ever held at the Gallery, necessitating NPG's first use of a ticketing system for admission.

"Group Portrait: The First American Avant-Garde," opened on May 10, 1991. Organized by guest curator Steven Watson, the exhibition brings together Gertrude Stein, Ezra Pound, Alfred Stieglitz, Marcel Duchamp, and their friends--the innovators in the visual and literary arts who set American culture in a new direction in the early years of this century.

"Lincoln and His Contemporaries: Mathew Brady Photographs from the Frederick Hill Meserve Collection," was comprised of 60 modern albumen prints of notable Americans of the 1860s made from original glass-plate negatives.

Publications - Both the exhibition catalogue, Old Hickory: A Life Sketch of Andrew Jackson, and Andrew Jackson: A Portrait Study, a definitive list of located portraits, were published by the Washington State University Press for NPG and the Tennessee State Museum. Magical Mixtures: Marisol Portrait Sculpture was published by the Smithsonian Institution Press. Last year's Irving Penn catalogue received both American Institute of Graphic Art and American Association of Museums awards for its design. The University of Pittsburgh Press published New Perspectives on Charles Willson Peale (1991), and Yale University Press published volume 3 of Selected Papers of Charles Willson Peale and His Family: The Belfield Farm Years, 1810-1820.

Publications in progress include the papers from the 1987 conference, "The Portrait in Eighteenth-Century America," to be published by the University of Delaware Press; and the catalogue of the works of the profilist Charles B. J. Fevret de Saint-Memin (1770-1852), to be published by the Barra Foundation. Information on the life portraits of George Washington is being supplied for The Papers of George Washington.

Education - The Education Department interprets the Gallery's collections for its visitors through daily tours, elementary and secondary school programs, senior citizen outreach programs, and public programs such as "Cultures in Motion: Portraits in American Diversity" and "Tea Time Lectures." In FY 1991, the department revised two of its African-American secondary school programs to address college audiences; conducted photography workshops for high school students in conjunction with the "Camera Portraits" and "Annie Leibovitz Photographs, 1970-1990" exhibitions; and conducted a series of family workshops titled "How Do You Look?" in conjunction with the "Annie Leibovitz Photographs, 1970-1990" exhibition, and "Making a Marisol" in conjunction with "Magical Mixtures: Marisol Portrait Sculpture" exhibition.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, NPG requests an increase of 5 workyears and \$158,000 for curatorial support staff and travel (2 workyears and \$74,000); for administrative support staff (2 workyears and \$58,000); and for the senior citizens outreach program (1 workyear and \$26,000). As a joint request with the National Museum of American Art (NMAA), NPG also requests 1 workyear and \$51,000 for a safety specialist for the American Art and Portrait Gallery Building's Office of the Building Manager. This request is justified in the NMAA narrative.

Curatorial Support Staff and Travel (2 workyears and \$74,000) - As the National Collections grow, it is NPG's obligation to care for, document, research, and exhibit these collections. At present NPG cannot fully satisfy its own standards for collection documentation because of lack of staff. Although the size and use of these collections have grown enormously, staffing levels have not increased in more than ten years. If documentation is incomplete, the staff cannot respond adequately to public inquiries and is impeded in the preparation of special exhibitions, scholarly research, and accurate

permanent object files. Travel costs associated with scholarly research, outreach, and acquisitions have increased, but trips must be curtailed due to a shortage of travel funds.

An increase in curatorial support staff will allow the curators to delegate routine collections maintenance responsibilities and focus more efficiently on research projects. Additional support staff will greatly enhance care of NPG's growing collections and the quality of basic research material that goes into each object file. Additional support staff will help make NPG collections materials available to outside researchers, enhancing and facilitating the interchange among museums and scholars. Special research challenges are posed by collections with an emphasis on the diversity of American society, and this is an area for which NPG especially needs additional staff. The fundamental research NPG provides on objects has been a model for portrait research in other institutions; with additional staff and support funds, the Gallery can continue to set the standard for the field.

In addition to supporting travel (\$20,000) in connection with scholarly research, outreach, acquisitions, and exhibitions, the funds requested will pay the costs of two positions. A full-time secretary (1 workyear and \$25,000) will perform routine secretarial duties in support of the professional staff as well as assist in compiling the permanent object files. A research assistant (1 workyear and \$29,000) will coordinate incoming acquisitions and compile NPG's Commissioners reports for semiannual meetings, research pending acquisitions, perform basic research on objects, catalogue new acquisitions, and provide research support for curatorial research projects.

On the most basic and critical level, this program increase will enable NPG to enhance institutional research efforts and service to scholars and the public by strengthening technical support of its research, exhibition, and acquisition programs.

Administrative Support Staff (2 workyears and \$58,000) - Recent reorganization has significantly increased the responsibilities and duties of NPG's deputy director and the associate director for administration who share the secretarial support of one person. A single person can no longer handle the amount of work produced by these two supervisors. In addition, there is no permanent clerical support for the administrative officer. These three professional managers are currently performing many of their own clerical tasks and must often work excessive overtime to complete the major duties of their positions.

The funds requested will pay the cost of a full-time secretary/assistant to the deputy director (1 workyear and \$27,000), and a clerk-typist (1 workyear and \$25,000) to perform general clerical duties, such as telephone answering, filing, copying, and typing for the Director's Office, the Administrative Office, and staff members in various departments of the Gallery as required. This request also includes funds for related support costs (\$6,000).

Overall, Gallery programs have increased tremendously in the last several years, yet the level of administrative support has not increased. Strong administrative support is vital in any organization; the sound management of the Gallery is in jeopardy for lack of it.

Senior Citizens Outreach Program (1 workyear and \$26,000) - NPG was the first Smithsonian museum to identify and provide museum services to senior citizens, an age group that is steadily growing. Since 1983, the Education Department has provided outreach programs reflecting the Gallery's permanent collection to senior groups unable to travel

to the Gallery. The demand has been overwhelming. During the eight-month schedule in 1990, 4,175 senior adults were served. Many requests were turned down, and services cannot be provided during the summer months because of workyear limitations.

The workyear and funds requested will allow the Gallery to hire additional education aides to carry out the Gallery's adult outreach programs and pay for supplies, materials, and fees necessary for program development and expansion. New resources will enable the Education Department to expand its services to the increasing senior adult community in the Washington metropolitan area.

The popularity of the Education Department's adult outreach program has contributed to the health and well-being of a substantial population and has generated increased visits by mobile senior groups to the National Portrait Gallery. Adult outreach is a vital part of the Gallery's continuing efforts to serve a wider audience.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Various sources, which include the Gallery's share of sales in the museum shop, sales of photographic reproductions of collection objects and publications, and participation fees from museums to which NPG loans objects, make up these funds. These funds help defray the costs of publications, public lectures, symposia, and special events for exhibition openings, loan exhibition development and management, and research.

Restricted Funds - Designated for specific purposes, these funds are in the form of gifts and grants from individuals, foundations, organizations, and corporations. The American Express Foundation supported the exhibition "Annie Leibovitz Photographs: 1970-1990." The exhibition was organized by the International Center of Photography in conjunction with NPG and includes portraits of figures in American popular culture. Mr. and Mrs. Robert Krueger made a generous contribution to be used to purchase a portrait of President George Bush for the NPG's Hall of Presidents. The exhibition "Group Portrait," about some of the fascinating artists who constituted the American avant-garde in the period just before the First World War, was supported by donations from Harryette and Marcus Cohn and Abbeville Press, Inc. The Barra Foundation, Inc. provided a grant in support of the future publication of NPG's book on Charles B. J. Fevret de Saint-Memin. In addition, the Gallery received gifts from a number of individual donors as well as substantial contributions for future activities and general support from the Federal National Mortgage Association Foundation, the Phi Beta Kappa Society, and the Ruth and Frank Stanton Fund.

HIRSHHORN MUSEUM AND SCULPTURE GARDEN

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	78	3,634	1	209	-	525	-	1,625	-	-
FY 1992 Estimate	78	3,941	1	222	-	462	-	2,087	-	-
FY 1993 Estimate	79	4,321	1	222	-	488	-	2,100	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - Public Law 89-788, signed on November 7, 1966, established the Hirshhorn Museum and Sculpture Garden (HMSG) as the Smithsonian's museum of modern and contemporary art. While the nucleus of the collection remains Joseph Hirshhorn's original gift, it has been greatly enriched by Mr. Hirshhorn's bequest of the art he had collected since 1966. Other benefactors, such as collectors and artists, continue to give works to the Museum. Purchases made from funds provided by Congress, the Smithsonian's Board of Regents, Mr. Hirshhorn, private donors, and sales from the permanent collection have broadened the scope of the collection. The collection is the basis of an active program of exhibitions. The Museum staff conducts extensive research, prepares catalogues, and offers a variety of educational activities.

For FY 1993, HMSG requests an increase of 1 workyear and \$380,000 to support exhibition costs (1 workyear and \$150,000); to enhance its educational offerings to the public (\$130,000); and to automate the library catalogue and to catalogue books (\$100,000).

PROGRAM - In keeping with its status as a museum of modern and contemporary art, HMSG conducts programs of research, exhibitions, collections management, acquisitions, and educational activities involving audiences of all ages. Opened to the public on October 4, 1974, the Museum attracts approximately one million visitors a year, making it one of the most heavily visited contemporary art museums in the United States.

Research - The Museum's resources include more than 13,000 works of art, a curatorial file providing information on artists and works in the collection, and a library with 36,000 books and exhibition catalogues. The staff researches the provenance, exhibition history, iconographic significance, and physical condition of each work of art in the permanent collection. A new system will ultimately allow researchers to retrieve information concerning the collection through their computer terminals. Researchers and students can study works of art not on display.

Exhibitions - The Museum's active exhibition program draws upon its own collection as well as outside collections. Nearly 700 works from the permanent collection are on display. In FY 1991, HMSG showed three major exhibitions: "John Baldessari," organized by The Museum of Contemporary Art, Los Angeles; "Sigmar Polke," organized by the San Francisco Museum of Modern Art; and the "Tenth Annual Awards in the Visual Arts Exhibition," organized by the Southeastern Center for Contemporary Art.

The Museum organized smaller exhibitions based on its collections displayed in FY 1991. These were "Comparisons: An Exercise in Looking" (partially funded by the Smithsonian Special Exhibitions Fund); "Images of American Industry from the Museum's Collection"; and "Picasso Linocuts from the Museum's Collection."

"Directions" is a series of one-gallery exhibitions of works by emerging artists and solo exhibitions of specific bodies of work by better-known artists. These small-scale shows strengthen the Museum's mission to present international modern and contemporary art. They provide a forum that initiates dialogue on subjects otherwise difficult to address. Artists featured in FY 1991 included Boyd Webb; Mike Kelley, with Half a Man; and Adrian Piper, with What It's Like, What It Is #2.

The innovative "Works" program integrates the Museum's building and grounds with the creative process. The Museum commissions artists to visit the Museum and create temporary site-specific pieces. In FY 1991, artists included David Ireland, Lawrence Weiner, and a collaboration of Ann Hamilton and Kathryn Clark.

Collections Management - HMSG inventories the collection on a three-year cycle, with annual spot checks. The Museum reviews its permanent collection to reshape a formerly private collection by deaccessioning and disposing of works of art judged to be surplus, redundant, duplicative, or of lesser quality. The proceeds thus realized are accumulated in a fund for new acquisitions. As specified by law, HMSG's Board of Trustees votes its approval for all deaccessioning.

Acquisitions - The legislation establishing HMSG described the Museum's function as a "museum in Washington, D.C., where modern art could be exhibited and studied...[to]...enrich the culture of the Nation." To carry out this mandate, it is essential that the Museum's collection always include contemporary art and that the Museum keep abreast of current developments in the visual arts. To present an accurate account of aesthetic developments on an international level, the Museum maintains an active acquisitions program. In FY 1991, the Museum used Federal funds to acquire, among others, David Hammons' Untitled; Bill Jensen's Lie-Light; Robert Moskowitz's Giacometti Piece (for Bob Holman); and Joan Nelson's Untitled. The Museum used private funds to purchase Jean Dubuffet's Ideoplasme L10; Alfred Jensen's The Sun Rises Twice per I, per II, per III; and Anish Kapoor's Untitled. Also purchased with private funds were Malcolm Moreley's Black Rainbow over Oedipus at Thebes; Arnaldo Roche-Rabell's Like a Thief in the Night; and Susan Rothenberg's IXI. Among the works of art received as gifts were Bryan Hunt's Lure II; Theodore Roszak's Ascension; Robert Ryman's Contact; and Pat Steir's The Breughel Series (A Vanitas of Style), Monochrome, Second Version.

Education and Public Orientation - To increase visitor appreciation and understanding of specific exhibitions and of modern art in general, the Museum provides visitors with a variety of educational materials, including catalogues, wall labels, and brochures. The brochures range from a single page to illustrated minicatalogues that are distributed free of charge. In addition, the staff develops material, such as posters, for sale in the

museum shop. Auditorium events include concerts by the 20th Century Consort, film programs, and lectures by artists, critics, and art historians.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, HMSG requests an increase of 1 workyear and \$380,000 to support exhibition costs (1 workyear and \$150,000); to enhance its educational offerings to the public (\$130,000); and to automate the library catalogue and to catalogue books (\$100,000).

Exhibition Costs (1 workyear and \$150,000) - The exhibitions held in HMSG are its major activity presenting modern and contemporary art to visitors. As the Smithsonian Institution's museum of modern and contemporary art, HMSG must maintain an active and changing exhibition schedule.

In FY 1990, due to increased costs for insurance (attributed to higher values placed on artworks by their owners and the increasing necessity of couriers), the costs of exhibitions had far outstripped the Museum's budget. The Museum has absorbed some of the increased costs by reducing the larger loan exhibitions shown each year from four to three. HMSG also reduced the "Works" to two a year. The Institution's FY 1992 request to Congress includes \$100,000 to help reestablish base funding for HMSG exhibitions. This FY 1993 request will complete the funding needed to support the exhibition program and to add graphic design capability to the staff.

The requested increase will support some of the higher costs of renting exhibitions organized by other museums and the higher costs of insurance, packing, and shipping (\$85,000). The Museum will also hire a graphic designer (1 workyear and \$35,000) to design and execute posters, catalogues, handouts, and wall labels. In addition, the increase will fund computerized equipment (\$30,000) that will allow the designer to design graphic materials more quickly and efficiently. Because it will permit simultaneous viewing of text and graphic designs, editing will also be more efficient. The outdated equipment currently used by the Museum is at the end of its useful life and often breaks down.

Loan exhibitions explore contemporary trends in the United States and abroad while they present historical information pertinent to a quality exhibition program. HMSG must not further compromise its already reduced schedule of major loan exhibitions.

Educational Programs (\$130,000) - To fulfill its mission of helping visitors understand and appreciate modern and contemporary art, HMSG is endeavoring to increase the accessibility of its collection to a variety of visitors in addition to the traditional art museum audience. During FY 1991, the Museum placed increased emphasis on its outreach initiatives. These initiatives attempt to bring new audiences to the Museum and also to take some Museum programs outside to a variety of audiences.

HMSG needs to expand its educational activities to make the Museum and its collection more accessible to these new and wider audiences. The \$130,000 requested for FY 1993 will support workshops for special audiences such as teachers, junior high school and high school students, and minorities. The funding will also allow the Museum to produce new educational materials to help visitors to understand and appreciate what they are viewing.

As a public institution, it is essential that the Museum educate a wide variety of people. Many of the one million who come to the Museum are first-time visitors to a museum of modern and contemporary art. To make their visits enjoyable and to encourage repeat visits, additional educational programs and materials are vital.

Library Automation and Cataloguing (\$100,000) - The HMSG library has 36,000 books and catalogues on modern and contemporary art. Since the Museum collects non-American art of the 20th century as well as American art from this period, its library is unique to the Institution. Currently, the library uses a manual cataloguing system, and approximately 47 percent of its material is not catalogued. By automating the catalogue, researchers will be able to find and use the library's resources more quickly and efficiently.

The HMSG library uses the Library of Congress and other data bases in cataloguing. With automation provided by the \$100,000 requested, the Museum will be able to use existing computerized data bases to reduce its cataloguing backlog. Because much of the library's collection originates from outside the United States, some original cataloguing will still be performed. HMSG estimates that reducing the catalogue backlog will take at least three years.

With the funds requested, HMSG will also purchase equipment that will allow the library to communicate with various data bases in Washington, D.C., and elsewhere. Additional equipment and software purchases will permit access to the catalogue via on-site computer terminals. Automating the catalogue is a multi-year project. The first phase will involve searching existing data bases and capturing cataloguing information for volumes in the HMSG collection. This phase is expected to proceed quickly. Later, contractors will catalogue material that is not in the existing data bases. As a service to the library community, the Museum will add this original cataloguing to the data bases so that it will be available to other art libraries.

Unlike some libraries in the Institution, the HMSG library is not a part of the Smithsonian Institution Libraries. It is important that the quality of its service as an art library be equal to that offered by the central library system.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds come from several sources, including the Museum's share of sales in the museum shop and plaza cafe and various annual allotments. These funds support the salary, benefits, and travel costs for the director, trustee travel expenses, various special events, and the 20th Century Consort.

Restricted Funds - HMSG has four endowment funds. The first fund comes from the \$1 million that Mr. Hirshhorn pledged at the signing of the initial agreement, and the second comes from the monies left to the Museum in his will. The third endowment comes from the sales of works of art. Finally, the Museum received funds from the Holenia Trust, a Swiss foundation established by Mr. Hirshhorn. The Museum can currently use these four funds only to purchase works of art. At the beginning of each year, the Museum's Board of Trustees has authorized 10 percent of the value of the endowment funds for use as a purchase fund for the current year.

ARTHUR M. SACKLER GALLERY/FREER GALLERY OF ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	68	5,224	1	96	-	50	42	2,558	-	-
FY 1992 Estimate	77	5,605	1	99	-	200	42	2,855	-	-
FY 1993 Estimate	87	5,314	1	99	-	185	42	3,332	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Arthur M. Sackler Gallery, established in 1982, and the Freer Gallery of Art, established in 1906, research, exhibit, acquire, care for, and manage collections of Asian art. In addition, the Freer contains a collection of American art by artists whose work was greatly influenced by Asian art. These two museums support complementary programs. In exhibitions, the Freer Gallery cannot lend or borrow collections, but the Sackler Gallery can exhibit its own collections, as well as loan exhibitions from other institutions. In addition, the Sackler may lend objects from its collections. Collections acquisition for the museums is coordinated so as not to be duplicative, providing the fullest possible resources for original research on, exhibitions about, and preservation of the cultural heritage of Asia.

For FY 1993, the Arthur M. Sackler Gallery and the Freer Gallery of Art request an increase of 10 workyears and \$459,000 to provide curatorial services for Japanese art (2 workyears and \$113,000) and enhance library support (2 workyears and \$58,000) at the Sackler Gallery; and, for the Freer Gallery, to establish an exhibition program (\$100,000), extend building management services (4 workyears and \$68,000), expand publications efforts (1 workyear and \$40,000), and develop an education program with related literature (1 workyear and \$80,000). These increases are offset by a reduction of \$750,000 for exhibit reinstallation.

PROGRAM:

ARTHUR M. SACKLER GALLERY - The Arthur M. Sackler Gallery opened in September 1987 as a museum of Asian art. Exhibitions of art from the Gallery's growing permanent collection are complemented by an active schedule of major loan exhibitions from collections in the United States and abroad. The goal of the Sackler Gallery is to expand knowledge about and appreciation of works of art from Asian and Near Eastern countries and the human and physical contexts from which works of art emerge, through research, exhibitions, conservation, education, and acquisitions.

Research - One of the Gallery's major focuses--research--provides the basis for exhibitions, publications, and collections acquisitions. The research program involves both visiting scholars and the permanent curatorial and conservation staff. The Sackler disseminates research results to the public through lectures, symposia, collection research files, exhibition catalogues, free gallery guides, brochures, papers, articles, and the quarterly journal Asian Art. Other publications include major catalogues for exhibitions, such as Yokohama: Prints from Nineteenth-Century Japan, and collections of the papers from Sackler symposia, such as Investigating Artistic Environments in the Ancient Near East.

Research in the area of conservation during FY 1991 concentrated on the lead-isotope ratio analysis of Chinese bronzes in the Sackler, Freer, and other collections and on the extension of identification methods in the field of organic colorants in East Asian paintings. As a joint effort, the Freer and Sackler Galleries received a Scholarly Studies grant to study the ancient Near Eastern metalwork collections in both museums. Results of this research will be published using the joint Publication Endowment Fund.

The Sackler Gallery attracts a large number of visiting research scholars and has an active program of research fellowships and internships. Recipients work closely with staff curators on topics related to the collections. Scholarly grant programs advance the research and education programs based on Asian art collections and exhibitions at the Sackler.

Exhibitions - Exhibitions draw from international public and private collections and from the Sackler Gallery collection. Many of the exhibitions travel to other museums and institutions. During FY 1991, five exhibitions have opened so far. These include "Chinese Lacquer Furniture," "Paper and Clay from Modern Japan," "Court Arts of Indonesia," "Photographs from the Sevruguin Collection," and "Crushed Lapis and Burnished Gold: The Art of Illumination." "Indian Paintings from the Collection of Howard Hodgkin" opens in September. Generally, one in three exhibitions is a major installation.

Future exhibitions include "Challenging the Past: The Paintings of Chang Dai-chien," "When Kingship Descended from Heaven: Masterpieces of Mesopotamian Art from the Louvre," and "Ancient Japan: Art and Culture."

Conservation - The Sackler conservation effort includes research to understand the origin and physical nature of objects and thereby improve the treatment of them. Expansion of the conservation facilities in the renovated Freer Gallery Building will also accommodate the requirements of the Sackler programs. During FY 1991, the staff of the conservation laboratory concentrated on objects for exhibitions such as contemporary Japanese prints and ceramics, Chinese furniture, Indonesian art and Indian and Persian illuminations. Environmental control of the Sackler exhibition galleries and collection storage areas in this new building also required attention. The East Asian Painting Conservation Studio, which conserves Sackler collections as well, is discussed in the Freer Gallery of Art section of this narrative.

Education - Through gallery tours, the docent program, school programs, teachers' workshops, hands-on tours, lectures, films, concerts, symposia, and in-gallery programs (such as storytelling) with members of the Asian community from the Washington metropolitan area, the Sackler continued to introduce and interpret Asian art and culture to its visitors. The idea of Learning Centers, used for two exhibitions in FY 1990, is being developed for future exhibitions. Learning Centers may include short talks by individuals from local Asian communities, videos, reading sections, demonstrations of techniques used

in creating objects, and information about the geography of a country, thereby helping visitors to understand the cultural and physical contexts from which objects in exhibitions originated.

The Gallery's publications program includes a quarterly magazine, Asian Art, written for the general public. This periodical uses color plates and informative text to discuss various research activities, the permanent collection, recent acquisitions, and special exhibitions. Topics have included Japanese craft traditions, games in Asian art, art and performing arts in Indonesia, East Asian furniture, art collecting, and the art of eating and drinking in ancient Iran.

Collections Acquisition - Although the Sackler Gallery has no Federal funding for the purchase of objects for the permanent collection, minimal Trust funds are provided through the sale of merchandise at the Sackler museum shop and from the Smithsonian Institution Collections Acquisition Program. The Gallery acquires art objects of Asia in its broadest terms, from Japan to the Near East. Objects acquired for the collection are of the highest quality in terms of aesthetic standards, cultural history, and physical condition. During FY 1991, the Sackler Gallery acquired 109 objects by gift and bequest and 122 objects by purchase. Purchases with Trust funds included a group of Chinese portrait paintings, bowls, and textiles; an Indian marble jali from the 17th century; and a number of Turkish objects from the 18th and 19th centuries. Gifts to the collection in FY 1991 included an Indian hair ornament of gold and a photograph of Afghanistan that had been part of a photographic exhibition in the Gallery.

FREER GALLERY OF ART - The Freer Gallery of Art, which opened in May 1923 as the first art museum of the Smithsonian, houses an Asian collection generally acknowledged to be among the world's finest. The Freer holdings also comprise a group of late 19th- and early 20th-century American art, including the world's most important collection of works by the American expatriate artist James McNeill Whistler. In addition to the program on American art, the goal of the Freer Gallery, similar to that of the Sackler Gallery, is to expand the knowledge and appreciation of works of art from Asian and Near Eastern countries and the cultural and physical contexts from which works of art emerge through research, exhibitions, conservation, education, and acquisitions. The collections and combined resources of the Sackler and Freer Galleries make them an important international center for scholarly research and education in Asian art and culture.

In the fall of 1988, the Freer Gallery closed for a multi-million-dollar construction and renovation project that will provide underground access between the Freer and the neighboring Sackler Gallery, triple the Freer's space for art conservation and technical study, increase its collection storage facilities by 70 percent, improve safety in public areas, and offer greater access to visitors with mobility impairments. Work on the gallery level and exterior will preserve the original appearance of the building, which is on the National Register of Historic Places.

During the renovation, research and plans for future exhibitions, conservation, education, and acquisitions continue. Collection items are available for study by appointment. The Library, shared with the Sackler Gallery, houses approximately 47,000 collection-related volumes and is open to the public for reference.

Research - The Freer and Sackler Galleries share research and support facilities and a single staff. Their combined resources serve as an international center for education and advanced scholarship in Asian art and culture. The results of these efforts are made

available through exhibitions, publications, and educational programs. In addition to the collections and the curatorial and conservation staff, research facilities include technical conservation laboratories and the library and archives.

Although the results of research are most visible in the Gallery's exhibitions, the Freer disseminates additional research results to the public through collection research records, lectures, and published papers and books, activities that continue even though the renovation forced the closing of all the exhibition galleries to the public. For example, revision of a 1973 catalogue, Chinese Figure Painting, required a comprehensive review of all literature written on the subject during the past 15 years, including scholarly developments since the original definitive publication. Current plans include the publication of this revised catalogue before the Freer reopens. The research staff recently published a catalogue raisonne entitled, An Ideal Country: Paintings by Dwight William Tryon. The Freer collection holds the world's largest collection of works by this American artist.

Exhibitions - During FY 1989 through FY 1991, while the exhibition galleries are closed to the public, extensive planning is under way for the reopening exhibitions. Ongoing research about Charles Lang Freer and the history of the Freer Gallery will provide significant information to be incorporated in these exhibitions, which will feature the finest pieces in the Freer Gallery's Asian and American collections. Only a small percentage of the permanent collection can be on view at any one time. The curators, therefore, have ample opportunity to present thematic, changing exhibitions drawing on various aspects of the collection while respecting the founder's wish that no works from outside the collection be displayed and that no works from the collection be loaned to other institutions.

Conservation - The Department of Conservation and Scientific Research carries out object conservation and analysis with a staff of conservators and conservation scientists. Beyond their roles as restorers and caretakers, members of the staff engage in primary research using scientific methods and technical equipment to learn dates of manufacture, geographic origins, and materials. Asian paintings are remounted and repaired by a staff of conservation specialists trained in traditional Japanese and Chinese methods.

Primary concerns for the past several years have been the conservation and storage of objects during the renovation and preparation for total reinstallation for the reopening. The environment in the temporary storage areas in the Freer during the renovation required continuous monitoring by conservators. Now that the collection has been moved into newly constructed areas of the Freer Gallery Building, the conservation staff has turned its attention to monitoring these areas.

Besides the work related to the Freer collections and reopening exhibitions, the East Asian painting conservators in the East Asian painting conservation studio look forward to a future program in which Americans will be trained to alleviate the critical shortage in this country of persons skilled in this specialized field. There are only three facilities in the United States capable of restoring and mounting rare Far Eastern paintings and screens, and they are occupied fully with the works in their respective museums. The nonpainting conservators will also utilize the expanded facilities of the technical laboratory for training purposes.

Education - A free, public lecture series was established in 1953. Each academic year, leading scholars present illustrated lectures on Asian and American art. During

FY 1991, the staff of the Freer Gallery carried out a wide range of research and scholarly activity that was made available to the public through educational programs, such as these lectures. When the Gallery reopens, educational materials available in the exhibition galleries will include a free introductory brochure for the visually impaired, free exhibition leaflets introducing various aspects of the Gallery's collections, and docent-led tours.

Collections Acquisitions - In FY 1991, the Gallery received five gifts including Chinese calligraphy and furniture and Japanese pottery. In FY 1991, the Gallery purchased 25 objects, including 18 calligraphers' tools in ivory, jade, coral, and glass. The Gallery received one substantial gift of a Chinese bronze ritual vessel dating from the 13th century B.C.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, the Arthur M. Sackler Gallery and the Freer Gallery of Art request an increase of 10 workyears and \$459,000 to provide curatorial services for Japanese art (2 workyears and \$113,000) and enhance library support (2 workyears and \$58,000) at the Sackler Gallery; and, for the Freer Gallery, to establish an exhibition program (\$100,000), extend building management services (4 workyears and \$68,000), expand publications efforts (1 workyear and \$40,000), and develop an education program with related literature (1 workyear and \$80,000). These increases are offset by a reduction of \$750,000 for exhibit reinstallation.

ARTHUR M. SACKLER GALLERY:

Curatorial Services for Japanese Art (2 workyears and \$113,000) - Better knowledge of the extremely influential area of Japanese art by the general public, as well as the scholarly community, will enhance understanding and appreciation of the culture of this important country. Japanese art constitutes one of the largest collections of the Sackler and Freer, yet full curatorial support is lacking. At the same time, there is a great demand for exhibitions and public programs focusing on Japanese art from Japanese-Americans and from citizens of Japan who supported the construction of a national museum of Asian art.

A stronger program in Japanese art will provide a better foundation to advance the level of knowledge in this area. Greater expertise of staff will enable the Sackler to undertake additional art historical research on Japanese art. This research will lead to more knowledge being disseminated through publications and lectures, more thought-provoking exhibitions, a faster building of collections in this area, and other projects to increase understanding of Japanese culture that cannot now be considered for lack of staff.

Currently, the staff that supports research for the Japanese art collections consists of one assistant curator who specializes in prints and lacquer and a temporary curatorial assistant. To balance the research staff in relationship to the Sackler collections and to meet public demand for exhibitions and other public programs, the Gallery requests funding to hire a senior curator of Japanese art and a curatorial assistant (2 workyears and \$113,000). The senior curator will engage in research on Japanese paintings from the collections, organize regularly scheduled exhibitions from the Gallery's collections to reach wider audiences, manage a growing collection, and respond to inquiries from the public and the Nation's schoolteachers. The curatorial assistant will assist the curator in daily administrative matters, including, but not limited to, responding to mail and telephone inquiries from the public and overseeing exhibition and publication checklists. The remaining amount (\$6,000) will provide funding for travel.

The Sackler and Freer require sufficient permanent staff to maintain high-quality research, exhibition planning, public service, and a successful acquisition program. This increase will ensure that this distinguished world center of Asian art culture meets its responsibilities.

Library Support (2 workyears and \$58,000) - The library and slide library serve the general public as a major source of information. Both facilities provide essential materials on Asian art and cultures that extend the knowledge of exhibitions.

The slide library and reference library personnel provide in-depth information to senior scholars, answer inquiries from the general public, and guide young students in the study of Asian arts and cultures. Teachers, students, and the general public borrow slides from the slide library and use the reference library for substantial research assistance.

This infrastructure request will provide funding for two positions that are currently filled on a temporary basis because of a lack of permanent positions and funds. A slide librarian (1 workyear and \$29,000) is needed to develop, organize, and catalogue the existing collection. A library technician (1 workyear and \$29,000) is needed to provide reference services to the public and assist with interlibrary loan requests.

The library and slide library provide an important resource for learning about culturally diverse Asian art. With the additional support of this request, the Galleries can provide public service necessary for better understanding and appreciation of Asian art and culture.

FREER GALLERY OF ART:

Establishment of an Exhibition Program (\$100,000) - Before the Freer Gallery closed to the public in 1988, exhibition changes were minimal and basically involved substituting objects within cases and established floor plans. The galleries seemed static. When it reopens, the Freer will strive to make exhibitions more accessible to a variety of audiences, more responsive to a broader public, and more effective with new exhibition techniques while still providing the core Freer audience with a sense of continuity in high standards and tradition.

The Freer Gallery has a 70-year tradition of providing exhibitions of Asian art of the finest quality. Although the Freer wishes to continue this tradition, it recognizes the need to make exhibitions more accessible and responsive to a wider audience. With this request the Freer will be able to do so.

The Freer requests \$100,000 to establish an exhibition program. This funding will permit the staff to incorporate new research and experiment with changing designs. Innovative exhibitions will help attract not only a larger audience but a wider one, as a visitor survey taken in the Sackler Gallery suggests. This request will allow the Freer Gallery to meet its public obligation to serve a culturally diverse audience and educate its visitors in the arts of Asia.

Extension of Building Management Services (4 workyears and \$68,000) - Renovations of the Freer Gallery Building will triple space for art conservation and technical study and increase its collection storage facilities by 70 percent. Because the renovation will substantially increase usable space, the current building management staff of eight

custodial workers will not be able to provide the cleaning and maintenance services required.

Regular cleaning and maintenance of collection storage and conservation and study areas is imperative to the proper care of the collections. Similarly, clean and well-maintained exhibition and other public areas influence each visitor's experience.

This request will fund four custodial positions (4 workyears and \$68,000) to meet the Freer's increased cleaning and maintenance needs, which include vacuuming, washing and waxing floors, cleaning public rest rooms, and performing minor repairs on the building.

Providing funds for extension of the building management services supports necessary cleaning and maintenance of a public facility and a national museum of Asian art.

Establishment of an Education Program (1 workyear and \$80,000) - Asian arts and cultures can be understood by the widest possible audience through comprehensive and carefully considered interpretive strategies within exhibitions and public programs.

In a time of increasing awareness of global interdependence and cultural diversity, relatively little is known about Asia in the United States. The Freer Gallery will offer educational programming and materials that will bring Asia into clearer focus and greater prominence. An education program will also develop activities and materials that reach into communities that have had little or no experience in Smithsonian museums and will introduce members of these communities to the richness of their own and other cultures.

This request is to establish an education program. An education specialist (1 workyear and \$35,000) will develop various materials for use by the general public in specific exhibitions. Literature and educational materials will introduce schoolchildren, especially elementary and junior high students, to Asian art and culture. These materials will also use objects from the Freer collection to explore cross-cultural aspects of Asian art and culture. These materials will complement programming incorporating interactive and hands-on activities. Additional funding (\$45,000) will purchase supplies, equipment, and printing.

Educational programs reach out to different communities and ages. Through the establishment of an education program at the Freer, the Gallery can carry out its mandate to increase awareness and understanding of Asian art and culture.

Expansion of Publications Efforts (1 workyear and \$40,000) - Through outreach literature, such as free gallery guides and the quarterly journal, the Sackler Gallery has successfully created a wider audience for Asian art, as evidenced by its increased visitor count and the diversity of its visitors. The Freer Gallery also seeks to reach an increased and wider audience than it had before it closed to the public in 1988. The current publications staff, consisting of one book editor and one temporary editor for ephemera, cannot support both Freer and Sackler activities when the Freer reopens.

The requested increase (1 workyear and \$40,000) will allow the Freer to hire a publications editor to edit and proofread catalogues, gallery guides, and other ephemera associated with the exhibitions and the ongoing research of the Freer staff.

When the Freer reopens, its full program of printed materials will demand expanded editorial services. Educational materials available in the exhibition galleries will

include a free introductory brochure for the visually impaired, free exhibition leaflets introducing various aspects of the Gallery's collections, and exhibition catalogues when financially feasible. With this request, these publications can be made available.

NONAPPROPRIATED SOURCES OF FUNDING:

ARTHUR M. SACKLER GALLERY:

Unrestricted General and Special Purpose Funds - Annual allotments to the Arthur M. Sackler Gallery provide funds to defray the costs of special events associated with the opening of new exhibitions, cover the travel costs for members of the Sackler's Visiting Committee, and enable the staff to do business. Proceeds from sales of Sackler items in the Sackler museum shop support the purchase of acquisitions, the publication of exhibition catalogues and gallery guides, and the operation of the shop itself.

Restricted Funds - These funds are contributions in the form of grants and gifts from individuals, foundations, organizations, and corporations for specific purposes. A major grant was received from a Taiwan organization to support the upcoming Chinese painting exhibition on the 20th-century painter, Chang Dai-chien. Several other grants were received to support symposiums associated with particular exhibitions.

FREER GALLERY OF ART:

Unrestricted General and Special Purpose Funds - Annual allotments to the Freer Gallery of Art provide funds to defray the costs of special events associated with the opening of new exhibitions, cover the travel costs for members of the Freer's Visiting Committee, and cover staff costs to do business. These funds also support the position of historian for the Freer and Sackler Galleries. Proceeds from sales of Freer items in the Sackler museum shop support the purchase of acquisitions, publications, and part of the operation of the Sackler museum shop. When the Freer reopens, proceeds from the Freer museum shop will support gallery activities.

Restricted Funds - These funds are contributions in the form of grants and gifts from individuals, foundations, organizations, or corporations for specific purposes. Two major grants were received, one from a Japanese organization and one from the Meyer family in connection with the Freer Renovation. The Japanese sponsorship contributed \$1.5 million towards the reinstallation of the exhibition galleries. The Meyer family contributed over \$1.0 million to renovate the auditorium now named the Meyer Auditorium.

The major portion of the nonappropriated Trust funds for the Freer comes from the Charles Lang Freer bequest, which restricts their use. The funds help finance the Freer's professional curatorial staff, administrative staff, acquisitions for the collection and library, maintenance of the Freer's courtyard, and operation of the Freer museum shop. Funds from the Harold Stern Memorial Endowment support scholarly research in the field of Japanese art. Funds from the Forbes Endowment support research in conservation.

ARCHIVES OF AMERICAN ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	23	1,177	-	98	-	-	19	1,762	-	-
FY 1992 Estimate	23	1,254	-	108	-	3	19	758	-	-
FY 1993 Estimate	26	1,354	-	108	-	2	17	697	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Archives of American Art (AAA), a national research repository with regional centers in New York, Boston, Detroit, San Francisco, and Los Angeles, has the world's largest collection of archival materials relating to the history of American visual arts, including documents, photographs, works of art on paper, and tape-recorded oral and video interviews. The Archives houses original materials in Washington, D.C., and makes microfilm copies of many materials available in the regional centers and through national and international interlibrary loans. The Archives seeks out, collects, and preserves original materials for study by scholars, students, curators, collectors, and others interested in the history of art and encourages research in American art and cultural history through publications, symposia, lectures, and other public programs.

For FY 1993, AAA requests an increase of 3 workyears and \$100,000 to provide technical support for the automated data base catalogue (2 workyears and \$75,000) and to provide an archival technician for collections processing (1 workyear and \$25,000).

PROGRAM - The Archives of American Art encourages the study of American art and cultural history by collecting, preserving, and making easily accessible for research the primary source materials that are essential to the interpretation and documentation of the visual arts in America.

Collections Acquisition - In 1990, AAA added to its collections 177 groups of papers that contain some 360,000 items, including correspondence, sketches, diaries, and photographs, along with other original documents. Among these papers are the records of San Francisco's The Focus Gallery, which showed photographs exclusively, and of the Philadelphia's Cheltenham Art Centre, which ran juried exhibitions of works by both Philadelphia and national artists. Other additions included correspondence of the painters Billy Al Bengston, Sam Gilliam, Peter Hurd, and Henriette Wyeth and of the sculptor Seymour Lipton; a scrapbook of John Singer Sargent among papers of his friend, the painter Dwight Blaney; and a large addition to the papers of the art historian Erwin Panofsky, including significant correspondence (1935-67) to other noted scholars.

The Archives also conducted 41 oral history interviews with the sculptors Richard Filipowski and V. V. Rankine, the painters Oscar Chelimsky and Dorothea Tanning, the photographer Johsel Namkung, and the dealer John Ollman, among others.

Collections Management - The Archives uses contract services to conserve, restore, and stabilize fragile or deteriorating documents. Work completed in 1990 includes restoration of a variety of documents, including drawings by Elihu Vedder and Oscar Bluemner and two illustrated letters by Lyonel Feininger. Some of the photographs restored are an image of Saul Steinberg and Hedda Sterne by George Platt Lynes, six images of Violet Oakley by Olive M. Potts and Eva Watson Schultz, and one of Henry Schnakenberg by Doris Ulmann.

Microfilming makes material readily accessible to researchers around the world and preserves original documents by eliminating the need for constant handling. The Archives continues to microfilm papers on an established priority basis and during 1990 completed the filming of 59 collections, producing a total of 114 roles of microfilm--an estimated 125,400 images.

Research - AAA collections are now so extensive that it is impossible to do serious research in American art history without reference to them. During 1990, AAA's six centers received more than 3,525 research visits and responded to another 2,237 researcher inquiries. Scholars, students, curators, writers, collectors, dealers, and publishers studied more than 11,000 rolls of microfilm and/or oral history transcripts and original collections. Users borrowed an additional 1,985 rolls of microfilm through AAA's interlibrary loan program.

The results of all this activity were dozens of articles, dissertations, catalogues, and books published during the course of the year. These included two major works on Albert Pinkham Ryder, two exhibition catalogues on Winslow Homer and others on Albert Bierstadt and John Marin, as well as independent, scholarly books on George Catlin and his contemporaries and on the Mexican muralists in the United States.

Public Programs - Major activities during this period included two art fairs--the third annual USArt in San Francisco featuring 19th- and 20th-century American art and "Images and Objects: Art and Design of the 20th Century" in Boston. The Archives also co-sponsored with the National Museum of American Art a symposium in Washington, D.C., entitled "Cult, Culture, and Consumers: Collecting the Work of Self-Taught Artists in Twentieth-Century America." In addition, AAA professional staff lectured and participated in a variety of seminars and other symposia across the country.

The Archives also continued its series of publications aimed at increasing access to its collections with the Inventory of the Records of the National Arts Club, 1898-1960. Another book, The Old Guard and the Avant-Garde: Modernism in Chicago, 1910-1940, an edited collection of the proceedings of a 1988 AAA symposium, was published by the University of Chicago Press.

Finally, two AAA exhibitions produced in New York and Washington featured new acquisitions to the collections and selections from the Herbert Waide Hemphill, Jr., Papers. In addition, the Archives loaned some 65 documents to other institutions for exhibitions in the United States and one in France.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, AAA requests an increase of 3 workyears and \$100,000 to provide technical support for the automated data base catalogue (2 workyears and \$75,000) and to provide an archival technician for collections processing (1 workyear and \$25,000).

Increased access to AAA collections and service to its research constituency are the essence of this request. The requested funding will enable the Archives to provide extensive and current information on its collections to researchers in libraries, schools, and institutions worldwide, making its rich, primary source materials better known. Ultimately, the result will be an increase of knowledge and contributions to the understanding of America's cultural heritage through the publications, exhibitions, and programs that can only be accomplished when there is sufficient documentary evidence available for research.

Technical Support for the Automated Data Base Catalogue (2 workyears and \$75,000) - Over the past four years, the Archives of American Art has been converting its manual catalogue system of more than 5,600 records to an automated data base with the help of two major foundation grants. In June, AAA achieved its goal of placing that data base into the Research Libraries Information Network (RLIN). The catalogue is now available to researchers in schools and libraries across the country and around the world. Such easy access to information about AAA collections will encourage expanded use of AAA resources, particularly its interlibrary loan program that provides users with the documentation they need for their studies wherever they are and whenever they need it. In addition, the international network enables AAA researchers to search for information on and to cross-reference subject matter of interest to them in catalogues of related repositories, helping them to discover what else may be available.

AAA will use the requested funding to hire a trained archivist/automation specialist with expertise to manage the automated data base program along with a data input technician (2 workyears and \$68,000). The remaining \$7,000 will be applied toward annual network fees and telecommunications costs for use of the network.

Management of AAA's data base, its continued development and refinement, creation of needed authority files, addition of new catalogue entries generated from new collections acquired, and servicing the international data base requires uninterrupted technical expertise and staffing as well as support for network and telecommunications fees. The Archives hired such expertise, using foundation funding, to accomplish the conversion of the manual catalogue to the automated system. Now essential is a small but permanent staff of a trained archivist/automation specialist and a data input technician devoted to managing the data bases, creating new records, working with the international network, and keeping the AAA catalogue current. This funding (reduced from an original request for four positions) enhances AAA's ability to support its automated catalogue data base operations and to provide worldwide users access to AAA collections.

Archival Technician for Collections Processing (1 workyear and \$25,000) - For the safety and preservation of the documents, groups of papers the Archives acquires cannot be used by researchers until they have been sorted, arranged, preserved, described, and catalogued. In other words, though the papers are in the custody of the Archives, they may not be available. Over the past decade, the Archives has been confronted with a steadily growing backlog of unprocessed materials resulting from increased numbers of collections acquired with no corresponding increase in the number of technical staff who must handle them. Further effects of unprocessed materials beyond inaccessibility are

deterioration of documents, insufficient security, and lack of staff control, both intellectual and physical, over the collections. Further, the Archives appears to be inadequately responsible to donors of papers and unresponsive to those who would use its resources. This situation will only worsen as the fields of art history and American studies continue to expand.

Funding for one additional archival technician (1 workyear and \$23,000) will begin to address the backlog and alleviate the untenable conditions surrounding the unprocessed collections. The technician will dedicate full-time effort to reducing the backlog and to keeping up with the processing of new papers coming into the collections. This individual will arrange new collections, conduct necessary preservation measures, organize and place papers in acid-free folders and containers, label collections, write descriptions, and prepare the material for microfilming, research use, and safe storage. Additional funding (\$2,000) for archival supplies will enhance the preservation and housing of collections.

Because archival work is labor intensive, there simply is no way to accomplish the necessary work other than with sufficiently trained, professional staff. The addition of an archival technician will enable the Archives to manage its collections better, to fulfill its responsibilities to preserve and protect its collections adequately, and to make its resources available for research in a reasonable period of time. Without such support, the Archives can only fall further and further behind.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Provided through annual allotments, these funds defray costs associated with special events recognizing donors to the Archives, supplement travel expenses incurred by the Archives' Board of Trustees, and provide partial support for general operating costs.

Restricted Funds - Fund-raising activities, gifts, foundation and corporate grants, the Board of Trustees, and a membership program generate funds for the Archives. A substantial portion of this income supports AAA's general operating expenses, its oral history program, and its publications program.

Continuing programs supported by foundation and corporate funds include the Philadelphia Documentation Project underwritten by the Pew Charitable Trusts, the retrospective cataloguing and automation project underwritten by the J. Paul Getty Trust and the Andrew W. Mellon Foundation, and national collecting projects underwritten by the Henry Luce Foundation. A major grant from the Brown Foundation as well as income from the Albert and Peggy deSalle Charitable Trust, the Dorothy Varian Bequest, and the Wellin-Taubman Reserve Fund established in 1986 by AAA's Board of Trustees also help to underwrite the costs of AAA's basic programs.

COOPER-HEWITT MUSEUM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	35	1,816	17	888	1	1,705	1	450	-	-
FY 1992 Estimate	35	1,993	17	951	1	1,119	-	345	-	35
FY 1993 Estimate	48	2,968	17	951	1	1,178	-	297	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Cooper-Hewitt National Museum of Design, located in New York City, explores both the processes and the products of design. It examines the influence objects have on daily life--how they shape and are shaped by culture. The design concerns of the Museum are varied, including urban planning, architecture, industrial design, landscape design, interior design, textiles, fashion, theater arts, advertising, graphic arts, and crafts. The National Museum of Design encourages "good design," explains the design processes, fosters discussion in related fields, and facilitates the dialogue between audience and designer.

For FY 1993, Cooper-Hewitt requests an increase of 13 workyears and \$975,000 for an assistant director for external affairs (1 workyear and \$90,000); conversion of education and exhibition positions and base operating support to Federal funding (4 workyears and \$270,000); positions in the Business Office to address audit deficiencies (3 workyears and \$115,000); clerical support (2 workyears and \$62,000); an archivist and base support (1 workyear and \$88,000); new positions and base support for collections management (2 workyears and \$250,000); and base operating support for buildings, grounds, and the newly acquired Fox House (\$100,000).

PROGRAM - Cooper-Hewitt is the only museum in America devoted exclusively to historical and contemporary design. The Museum pursues its goal through exhibitions; publications; provisions for collections study, research, and display; and educational programs for professionals, the adult public, and schoolchildren.

Exhibitions - Early FY 1991 saw the continuation of important and innovative exhibitions for Cooper-Hewitt. "Mondo Materialis" explored the possibilities of new materials in the man-made environment. An international group of architects, interior designers, and product designers designed more than 100 unique collage panels for this highly contemporary exhibition. Other exhibitions mounted in the first half of FY 1991 were "Gold of Greece: Jewelry and Ornaments from the Benaki Museum" and "18th-Century Scenic and Architectural Design: Drawings by the Galli Bibiena."

In the second half of FY 1991, Cooper-Hewitt made a significant departure from past exhibition history to present "The Cooper-Hewitt Collections: A Design Resource," which focused entirely on the Museum's permanent collections. The exhibition features almost 1,000 objects and represents the breadth and depth of the Museum's holdings. The initial selection of objects will be rotated regularly throughout the 18 months of the exhibition as the Museum draws from its vast collection to create a changing panorama of design.

Future exhibitions now in the planning stages include the work of 20th-century American industrial designer Donald Deskey and "Maps: Ways to Read the World." "Maps" has been designated as Cooper-Hewitt's Columbus Quincentenary commemoration.

Publications - For the first time in its history, Cooper-Hewitt used Federal funds to publish a free brochure to accompany the exhibition "The Cooper-Hewitt Collections: A Design Resource." In addition, work began in FY 1991 on four major publications that will be produced with privately raised funds: a large, scholarly book based on the Cooper-Hewitt Museum, its collections, philosophy, and definition of design; a catalogue based on the work of Donald Deskey and the designer's archives housed at the Museum; a book on maps to accompany the Museum's upcoming exhibition; and Conservation Concerns: A Guide to Collection Care, a compilation of scholarly articles about conservation and collection care.

In FY 1991, Cooper-Hewitt was successful in raising the \$400,000 necessary to meet the Andrew W. Mellon Foundation Challenge Grant for Publications, thus creating a \$600,000 endowment fund to support future scholarly publication projects.

Collections Activity - During the first three-quarters of FY 1991, Cooper-Hewitt acquired 831 additional objects for its collection. Among the most notable were the Don Wallance archive, documenting the career of this notable American industrial designer; a large selection of ceramics and glass designed by the American Russel Wright; a large group of American machine-made wallpapers produced between the 1930s and 1960s; mid-18th-century English brocaded silks; 40 drawings for garden designs, 1912-19, by André and Paul Vera; and a drawing and related mimeo print, Ten Deck House, 1928, by R. Buckminster Fuller.

During the same period, the Museum loaned 117 objects to 22 museums and borrowed 461 objects. In preparation for outside loans and for use in Cooper-Hewitt exhibitions, the Museum's two conservators treated 320 objects. Approximately 250 scholars, private individuals, designers, and corporate interests visited the collections for research purposes. Visitors included representatives from Gallison Books; Liz Claiborne; Scalamandre, Inc.; Warner Fabrics; Smithsonian Product Development; Marta Gallo (an Italian silk manufacturer); Hee Jin Kim (a Korean braid maker); Stubbs Books and Prints; Bob Habol, Inc.; Tiffany Archives; and many others from museums and universities around the world. Fieldcrest Cannon Mills and Cooper-Hewitt completed a series of bed linens based on textiles and drawings in the permanent collection. The Museum's specialized research library, which complements the collection, received 571 visitors.

Research - Besides exhibition-related work, notable collection-based research included the study of 18th-century drawloom woven silks; the cataloguing of wallpapers acquired since 1985; research on and documentation of the Shapiro collection of Soviet propaganda porcelains; preparatory research for the future exhibition called "Activities of Daily

Living," which will focus on issues of accessibility in the built environment; and research on Donald Deskey furniture, interior, and industrial design.

Established to advance the understanding of design and decorative arts as it encourages and supports a promising young scholar, the Peter Krueger-Christie's Fellowship provides a stipend of \$15,000 for a one-year period and a travel allowance of \$2,000 for research at Cooper-Hewitt. Named in FY 1991, the second Fellow will conduct research on the 20th-century American industrial designer Don Wallance.

Educational Programs - For the first time in its history, Cooper-Hewitt received federally appropriated funds in FY 1991 designated for use by the Education Department. These funds enabled the Museum to offer children's programs and free public programs. In the first nine months of FY 1991, the Museum served approximately 10,000 people with a wide range of lectures, courses, symposia, workshops, gallery programs, and tours. Notable symposia included "Smart Bricks, Useful Trash, and Elastic Chairs: Reinventing the Material World," "Design Narrative: Nature 2000," and "The Modernist Impulse in the Landscape of Invention: Los Angeles Architecture, 1920-1990." Outreach efforts were highlighted by "Ritual and Celebration: African Culture in the New World," a series of free lectures and outdoor concerts. This summer series explored the transference, adaptation, and transformation of various African cultures to the Americas as a consequence of the African slave trade. The total attendance for all four nights was estimated at 1,650 people.

This summer New York City junior high school students from public inner-city schools participated in a design and construction project in the Museum's garden. Cooper-Hewitt sponsored the project, and the Salvatori Educational Center for the Built Environment organized it. During the course of "A Bridge to Learning," the students built a 36-foot model of a suspension bridge. By participation and interaction in this project, the students were introduced to basic structural engineering principles. The bridge will remain on view to the public through the fall of 1991.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, Cooper-Hewitt requests an increase of 13 workyears and \$975,000 for an assistant director for external affairs (1 workyear and \$90,000); conversion of education and exhibition positions and base operating support to Federal funding (4 workyears and \$270,000); positions in the Business Office to address audit deficiencies (3 workyears and \$115,000); clerical support (2 workyears and \$62,000); an archivist and base support (1 workyear and \$88,000); new positions and base support for collections management (2 workyears and \$250,000); base operating support for buildings, grounds, and the newly acquired Fox House (\$100,000).

These requests are not for new initiatives. They are for funds to provide an infrastructure necessary to meet basic professional needs. By strengthening its organization, the Museum will be able to work more efficiently in achieving its goals as the National Museum of Design.

Assistant Director for External Affairs (1 workyear and \$90,000) - Cooper-Hewitt seeks funding to hire an assistant director for external affairs to oversee and direct the activities of the offices of Development, Membership, Special Events, and Public Information.

A primary responsibility of this position will be to devise a strategy and implement long-range fundraising and public relation priorities for the Museum. The goal will be to heighten the Museum's national visibility and increase its audience. The assistant

director for external affairs also will be responsible for the Museum's financial development, including identifying funding priorities, creating strategies for funders, supervising grant applications, and establishing personal contact with potential donors. The position will supervise the activities of special events planning and work to organize an effective membership campaign to strengthen the Museum's membership base. These responsibilities are critical because, unlike other Smithsonian museums, Cooper-Hewitt must raise 50 percent of its operating budget every year. Funds invested in this position will have long-range returns. By creating a single supervisor for these departments, the Museum will enhance its efforts to communicate its mission and goals effectively and create a unified image and funding strategy that will clarify its unique role within the Smithsonian.

To be the National Museum of Design, it is important that the Museum's message be clear. An administrator who supervises the external affairs of the Museum will serve to strengthen the Museum's means of outreach and the corresponding results.

Conversion of Education and Exhibition Positions and Base Operating Support (4 workyears and \$270,000) - Cooper-Hewitt must raise 50 percent of its operating expenses every year, which amounts to approximately \$2 million. Included in this figure is nearly \$400,000 to cover the salary expenses for approximately 12 essential employees. At this time, Cooper-Hewitt seeks a Federal conversion, with full retention of entitlements, for two educators (2 workyears and \$84,000), one public information assistant (1 workyear and \$31,000), and one exhibition researcher (1 workyear and \$55,000) to alleviate part of this annual burden of fundraising to cover salary expenses. For FY 1993, Cooper-Hewitt requests an additional \$100,000 for support of free education programs to children and the public. Cooper-Hewitt will continue to raise funds annually to support ongoing programmatic activities.

In FY 1991, Cooper-Hewitt received \$200,000 in Federal funds to create a full-service education department and to help reduce a facilities base deficiency. With this funding, the Museum began to offer a series of free concerts and lectures to the public, school programs, printed educational materials, and docent guided tours of the Museum. This appropriation was, and is, the only funding the Museum receives for education programs, which are a core activity of any museum's operation.

Since 1976, Cooper-Hewitt has presented to the public, 12-16 exhibitions per year, many of which were originated by Cooper-Hewitt's curatorial divisions staff. The Museum has only one Trust-funded exhibition researcher on staff to work on exhibition research. Museum revenues from admissions, museum shop sales, and membership fees pay for expenses associated with this position. With diminishing Trust funds, this critical position, impacting educational public programming, becomes increasingly difficult to fund.

A Federal appropriation to cover these salaries and operational costs will reduce the annual burden of fundraising. Because the education department serves more children every year, it is imperative that the efforts of the staff go toward the children rather than toward fundraising. With a reduced fund-raising burden, the Museum's educational services will be more effective and reach more people. Cooper-Hewitt will focus its efforts more on improved programming. In all, the requested funds will provide a strong infrastructure necessary for basic museum needs.

Business Office Positions to Address Audit Deficiencies (3 workyears and \$115,000)
- Cooper-Hewitt's location in New York City necessitates that the Museum handle many

day-to-day administrative functions that for Washington facilities are handled in central offices. The Museum's two-person Business Office is responsible for every aspect of the Museum's financial operations. The number, range, and complexity of these operations make them difficult for such a small office to handle efficiently and in a timely manner.

Cooper-Hewitt requests three administrative support positions: a personnel specialist (\$46,000), an accounting technician (\$31,000), and a budget analyst (\$38,000). Past audits by Coopers and Lybrand, the Institution's Office of Contracting and Property Management, and most recently the Office of Inspector General all concur that additional administrative staff is essential to meet the needs of a growing museum and to comply with Federal and Institutional rules and regulations. With these positions, Cooper-Hewitt can begin to carry out the administrative procedural improvements cited in a recent report issued by the auditors in the Institution's Office of Inspector General.

The additional staff will work to handle the many functions of the Business Office: paying 90 percent of invoices directly, processing all purchase orders, issuing petty cash, depositing all cash in local banks, reporting all transactions to the Institution's Office of Accounting and Financial Services, and processing all personnel transactions for a staff of more than 100 people.

Additional staff in the Business Office will make the Museum's business operations more efficient and accurate, enable operations to adhere more strictly to the policies and practices of the Smithsonian, and create a stronger and more effective link to Smithsonian systems as well.

Clerical Support (2 workyears and \$62,000) - The need for additional clerical support at Cooper-Hewitt is critical. Currently the Museum's only full-time clerical support is in the director's office. In other parts of the Museum, clerical support consists of part-time secretaries. This lack of clerical support means that most of the professional staff must perform clerical duties.

To use the time and expertise of the professional staff most effectively, Cooper-Hewitt requests clerical support (2 workyears and \$62,000) to assist the incoming assistant director for programs and the curator of design. These senior positions will be responsible for many new endeavors, including the organization of activities and exhibitions as well as staff management. Clerical support is essential for these positions to fulfill their responsibilities effectively.

Archivist and Base Support (1 workyear and \$88,000) - As the National Museum of Design, Cooper-Hewitt has actively collected important American design archives. These collections are an integral part of Cooper-Hewitt's mission to preserve the process of design and its history. The Museum is now among the most important repositories for the work of American industrial designers.

Yet the Museum is without staff or base support funds to care for these collections. The Museum needs a professional archivist (1 workyear and \$38,000) and base operating support (\$50,000) to purchase materials and storage equipment to house these collections and to make them accessible to students and scholars.

Without proper treatment and storage conditions, the materials in the Museum's design archives will deteriorate quickly and be lost forever. The addition of a staff member

dedicated to the care and organization of this material will ensure its longevity and usefulness as a research tool.

Collections Management Positions and Base Support (2 workyears and \$250,000) - Cooper-Hewitt's Wallcoverings Department houses more than 8,000 objects, the Nation's largest collection of these media. One full-time assistant curator cares for the collection. Unlike other curatorial departments within the Museum, information about this collection has not been computerized, making research and access extremely difficult. The Department of Decorative Arts has 18,000 objects and is the sole curatorial department in the Museum with only one curator. This department initiates and executes more exhibitions than any other department.

The Museum seeks funding for one full-time technician for the Wallcoverings Department (1 workyear and \$31,000), one assistant curator of the Decorative Arts Department (1 workyear and \$46,000), and additional funds (\$173,000) to provide critical operating support. This will enable Cooper-Hewitt to meet its research, collections management, and public service responsibilities.

The wallcoverings technician will enter this important collection data, now stored on thousands of file cards, into the computer; maintain proper storage conditions; aid in record photography; and assist scholars visiting the collection. The requested funding will support collections management in all curatorial departments. An assistant curator of decorative arts will assist in managing the decorative arts collections, including approving loan requests, fielding public inquiries, identifying objects for acquisition and deaccessioning, cataloguing the collection, and providing a liaison with crafts and decorative arts collections elsewhere within the Smithsonian. This will enable Cooper-Hewitt to maintain and service the decorative arts collection and permit the Decorative Arts Department to respond to requests and inquiries in a more timely fashion.

Remaining funds will further support collections management. The Institution is well aware that the collection storage facilities in the Miller House are inadequate. Uncontrollable temperature variations, for example, and falling plaster subject the collections to inappropriate risk. Currently, through Repair and Restoration of Buildings funds, the Office of Design and Construction is designing a Master Plan to link the Miller and Fox townhouses into one facility with greatly improved storage and study facilities. The project will require major portions of the building to be evacuated, and the Museum staff is now beginning to implement long-range plans for moving and storing the collections. The task is large and complex. Additional funds will be used to purchase supplies and to purchase and upgrade additional computer equipment to be used for inventory purposes during the move of the collections.

Base Operating Support for Buildings and Grounds (\$100,000) - The largest portion of Federal funds appropriated for Cooper-Hewitt has always been used for facilities maintenance and related purposes. In recent years, salary and benefit costs for Federal personnel account for the single most substantial portion of the Federal base. These increasing salary and benefit costs have eroded the funding for essential facilities maintenance and operational expenditures.

For the past several years, the Museum has been trimming its expenses by foregoing some services, such as window cleaning and horticultural services. The requested \$100,000 for base operating support for buildings and grounds will reinstate basic service contracts

and upgrade others. This basic maintenance will slow the rate of physical deterioration of the buildings and improve their public appearance.

Because the landmark mansion and garden and newly acquired Fox House are used increasingly each year, the appearance and condition of the buildings and grounds are extremely important. In particular, the Fox House facility will be used as the classroom and offices for an M.A. program in the history of European decorative arts co-sponsored by Parsons School of Design. The first floor has been renovated to accommodate the program beginning in September 1991. Other floors are scheduled for renovation for desperately needed office space and, ultimately, collection storage.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - The Museum obtains these funds from a variety of sources, including museum shop sales, product development, individual and corporate memberships, admission fees, donations, fund-raising events, and annual allotments.

Restricted Funds - Designated for specific purposes, these funds derive from grants, bequests, and donations from individuals, organizations, and corporations. During the first three quarters of FY 1991, significant gifts from Steelcase Design Group funded "Mondo Materialis," from the Arthur Ross Foundation supported "18th-Century Scenic and Architectural Design: Drawings by the Galli Bibiena," and from the J. M. Kaplan Fund, Inc., and the Smithsonian Special Exhibitions Fund supported "The Cooper-Hewitt Collections: A Design Resource."

As a result of a three-year campaign, The Overbrook Foundation as well as other donors provided invaluable assistance in matching the Andrew W. Mellon Foundation Challenge Grant for Publications to establish an endowment for scholarly publications. The second annual Peter Krueger-Christie's Fellow was chosen for the 1991-92 academic year. Mr. and Mrs. Harvey Krueger and Christie's, Inc., established and augmented the fellowship in honor of Peter Krueger. The fellowship supports the scholarly work of an advanced student with interests in the areas in which Cooper-Hewitt collects. In addition, Mr. and Mrs. Krueger initiated sponsorship of a paid summer internship program for four interns. The response to this program was overwhelming, and it is hoped that further funding will sponsor more interns in the coming years. Private support for acquisitions came from the Decorative Arts Association membership and programs, the Charles E. Sampson Memorial Fund, the estates of Dona Guimaraes and Helen Buckner, and a donation in the memory of Janet Woodbury Adams. In addition, acquisitions support was generously contributed by Corroon and Black and by Mario Buatta. The Helena Rubinstein Foundation again supported educational programming through scholarships for graduate students enrolled in the M.A. program in the history of European decorative arts. These scholarships have been awarded since the program's founding in 1982. Additional funds were donated in memory of director emeritus Lisa Taylor to the Lisa Taylor Fund for Design Research.

Government Grants and Contracts - Various government agencies and departments provide these funds for specific program support. The Museum annually seeks funding from the New York State Council on the Arts (NYSCA) for exhibition support and other programs. In FY 1991, NYSCA supported planning for the exhibition "Donald Deskey: Merchandising Modern Design in America," the upgrading of a collection's storage system, a publication on a collection of men's waistcoats, and the cataloguing of the Shapiro collection of Soviet porcelain.

NATIONAL MUSEUM OF AFRICAN ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	58	3,719	1	61	-	43	-	47	-	-
FY 1992 Estimate	58	3,891	1	61	-	56	-	225	-	-
FY 1993 Estimate	61	4,073	1	61	-	56	-	1,245	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The National Museum of African Art (NMAfA) is the only museum in the United States devoted solely to the collection, preservation, research, exhibition, and interpretation of the visual arts of sub-Saharan Africa. Although the Museum's primary emphasis is on the traditional cultures of the sub-Saharan region, it also studies and exhibits the arts of the entire continent. While the Museum's programs have their basis in the aesthetics of traditional African art, the Museum cooperates with organizations whose purposes complement and illuminate the art and cultures of Africa and enhance the visitor's experience and understanding.

For FY 1993, the National Museum of African Art requests an increase of 3 workyears and \$182,000 to expand the education program (1 workyear and \$42,000); improve collections accessibility and management (1 workyear and \$29,000); provide for curatorial travel (\$10,000); support educational publications (\$50,000); and establish a development program (1 workyear and \$51,000).

PROGRAM - The National Museum of African Art educates and instills an appreciation for the cultures and visual arts of sub-Saharan Africa. These goals are accomplished through the acquisition and care, exhibition, and interpretation of works of art in the context of African history, cultures, and aesthetics.

Collections Acquisitions - The Museum acquired 43 works of art in FY 1990-FY 1991. As culturally significant expressions of artistic creativity, five acquisitions are exceptional. A pair of Bamana antelope headdresses and a rare Mossi figure have strengthened the Museum's ability to exhibit and explicate the arts of the western Sudanic region. An extremely rare drum from the Baga peoples of Guinea has added an important work of art to the Museum's Guinea coast holdings. An elegant mask from the Punu of Gabon is an outstanding example from equatorial Africa. In contemporary art, the acquisition of two important ceramic works by the Kenyan potter, Magdelene Odundo (b. 1950); nine etchings by the Nigerian artist Bruce Onobrakpeya (b. 1932); one etching by Yao Quaye (b. 1954) and one watercolor by A. O. Adenaike (b. 1954), both of Nigeria; and two tapestries by the

Ivorian artist Gerard Santoni (b. 1943) have allowed the Museum to take an important step in building a collection of African contemporary art.

The Eliot Elisofon Photographic Archives acquired a total of 2,778 photographs in FY 1990-FY 1991 and a number of significant collections of vintage postcards. Particularly noteworthy are 155 slides of Dakar and Gorée in Senegal, an 1897 albumen print of the king of Benin, a collection of 148 black-and-white prints taken in the 1930s of the Cameroon grasslands, and 115 hand-colored lantern slides covering the Kamba people of Kenya, in 1922-25.

Collections Management - To refine the optimum environmental conditions for metal objects in the NMAfA collection, a dehumidification system was specified and installed in FY 1991. This modification decreased humidity to an optimum level of 40 percent. Conservation staff have devoted considerable time to treating and preparing objects for new permanent gallery installations. Staff conserved approximately 75 of the 117 objects for "The Art of the Personal Object" and 25 of the 64 ceramics for "Purpose and Perfection: Pottery as a Woman's Art in Central Africa."

In FY 1991, with the direction of an outside consultant, the Museum developed a computerized collections management program. It provides the Registration Department with an efficient data base for collection and loan records and computerized receipts, lists, and object information cards.

Research - The curatorial staff has engaged in collections-based research. Primary topics of curatorial study are Baule figurative sculpture, the Nigerian artist Olowe of Ise, and further research on the art of Benin. Work continues on an anthology of essays based on works in the permanent collection of African sculpture. The book will serve as an introduction to African sculpture, with an emphasis on archeology, history, context, style, and iconography.

Progress continues in the Photographic Archives on the duplication of images from the original Eliot Elisofon collection as well as classifying and housing the vintage postcard collection.

Exhibitions - Two new permanent exhibitions--on utilitarian objects, primarily from east and southern Africa, and on pottery from Central Africa--were installed and will open in FY 1992. The curatorial staff is working with three external specialists on the development of an FY 1993 exhibition that will examine a unique figurative art tradition of the Congo (Zaire) peoples and explore affinities in the works of African-American artists who draw inspiration from that tradition.

The exhibition, "Paramount Chiefs of Sierra Leone: Photographic Portraits" opened in FY 1991 for a ten-month showing. The Museum also mounted a major traveling exhibition, "African Reflections: Art from Northeastern Zaire," organized by the American Museum of Natural History, New York. It was particularly significant for its presentation of scholarly research on the history of art traditions in northeastern Zaire. In FY 1991, the Museum opened a new gallery devoted to experimental temporary exhibitions of works from the permanent collections. "A Cloth of Honor by Okon Akpan Abuje" presented a unique funerary cloth of the Annang of Nigeria; "Africa Illustrated: Fantasy and Reality before 1900" presented illustrations of Africa by Europeans in books in the holdings of the Smithsonian Institution Libraries, including the NMAfA Branch Library. The Curatorial,

Education, and Conservation departments collaborated on an exhibition, to open in FY 1992, of a rare Yoruba copper alloy ceremonial ring cast by the lost-wax method.

Publications - In FY 1991, work was begun on a series of publications devoted to the Museum's permanent installations: "The Art of the Personal Object" and "Purpose and Perfection: Pottery as a Woman's Art in Central Africa."

Education - The Education Department informs the public about African art and culture through interpretive programs, including tours, outreach, school and teacher-training programs, symposia, and seminars. In FY 1991, the Department placed greater emphasis on the development of educational materials such as slide sets, posters, videotapes, and teaching materials. During FY 1991, more than 1,200 public programs were offered by NMAfA, serving more than 40,000 individuals.

EXPLANATION OF PROGRAM INCREASE:

For FY 1993, the National Museum of African Art requests an increase of 3 workyears and \$182,000 to expand the education program (1 workyear and \$42,000); improve collections accessibility and management (1 workyear and \$29,000); provide for curatorial travel (\$10,000); support educational publications (\$50,000); and establish a development program (1 workyear and \$51,000).

Education Program (1 workyear and \$42,000) - All sectors of American society have been called upon to strengthen this Nation's educational effort. Museums have the capacity to be active partners in the spheres of inquiry and learning. Of special importance in this national effort is NMAfA's capacity to develop and disseminate elementary and secondary school curriculum materials devoted to African art, history, and cultures. NMAfA's dialogue with teachers demonstrates the acute need for materials and teacher training in these areas.

NMAfA's development of curriculum materials and teacher-training institutes devoted to African art, history, and cultures serves efforts to present a more diverse and equitable educational experience for all Americans. With these materials, teachers will have the tools to educate effectively, curricula will be broadened, and students' horizons will be expanded. NMAfA's museum-school partnership will be strengthened in a responsible and effective manner and its outreach extended.

The Museum requests an increase of 1 workyear and \$42,000 to hire an Education Specialist. The requested funding will enable NMAfA to develop curriculum materials that utilize the Museum's excellent collection and research resources, local teacher-training workshops, and summer teacher-training institutes to be offered nationally. To carry out this program, NMAfA will hire a senior-level education specialist to develop and actively participate in these educational initiatives.

The Museum recognizes that the development of its resources for elementary and secondary schools and their teachers will address an important aspect of the Nation's educational mandate: to assure that students and teachers reach their intellectual potential. With the requested funding the Museum can satisfy teachers' needs for curriculum materials in African art, history, and cultures and can provide the training to use the materials effectively.

Collections Accessibility and Management (1 workyear and \$29,000) - The National Museum of African Art plans to make its rich collections of objects and the Eliot Elisofon Photographic Archives widely accessible to the general public and to scholars for a variety of applications such as research, exhibition planning and design, imaging, and interactive displays.

By the close of FY 1992, NMAfA will have an automated collections management and information system selected and ready for entry. The Museum will then be faced with the enormous task of entering collections data into the system and maintaining it. The addition of the requested staff position will ensure that the technological potential of the system for public access is fully realized.

The Museum requests an increase of 1 workyear and \$29,000 for a collections management technician. The requested funding will provide necessary staff to implement a significant advance in the Museum's service to the general and scholarly public as well as to meet most effectively its responsibility of stewardship of the National Collections for the future. A fully automated system will provide standardized information that is easily retrievable in response to public inquiries, enable the Museum's staff to plan exhibitions and public programs more effectively, give scholars access to information that they need for their research, and improve security and care of the collections through an integrated collections management system.

The collections of the National Museum of African Art represent an unparalleled resource for the Nation. Increased accessibility to NMAfA's art objects and photographic archives for the public, scholars, and the Smithsonian itself will greatly enhance appreciation of African art and culture.

Curatorial Travel (\$10,000) - Contemporary African art affirms that Africa is a continent in transition. Its contemporary artists reflect the dynamics of tradition and change, synthesis and evolution. Yet Western scholarship and public perception have excluded the contemporary artist. The consequences of this cultural distortion are false notions of an Africa frozen in time, locked in ancient ethnic traditions. The National Museum of African Art is the only museum in the United States that acquires and studies African contemporary art as a stated part of its mission and its collections policy. The Museum is uniquely positioned to address systematically this creative work for the public and for scholars.

The Museum requests an increase of \$10,000 for curatorial travel. The requested funding will permit NMAfA research staff to address cultural misconceptions as they conduct research and lay the groundwork for contemporary African art exhibitions. NMAfA's exhibition program is vital and educational, but it cannot be adequately implemented unless funds are available for staff curators to do research in Africa because the artists and their work are there. These works are not to be found in European and American galleries and museums, which continue to concentrate on traditional art forms that are a subject of longstanding interest as well as part of a lucrative market. Moreover, documentation and publications on contemporary African art are scarce, except for limited special holdings in NMAfA Branch Library.

Contemporary African art continues to evolve in spite of these chronic limitations and the indifference of the established world of museums. With the requested funding, NMAfA can incorporate contemporary African art into its exhibitions and other programs for scholars and the Museum's public. The results will redress distortions in public

perceptions and knowledge of Africa, thereby contributing to the Smithsonian's cultural pluralism initiatives and enhancing public education.

Educational Publications (\$50,000) - The National Museum of African Art has vigorously pursued its public education program. The Museum now seeks to expand its educational efforts by developing and disseminating published materials for the general public, secondary school teachers and curriculum development specialists, parents and children.

Throughout the Nation educational curricula are being evaluated at all levels for their acknowledgement of cultural pluralism. For the most part, curricula do not address Africa in an accurate and balanced way because there is a dearth of educational material about Africa. NMAfA can fill the gap. The Museum's collections provide unique opportunities for teaching and learning about Africa's cultures, history, and visual traditions. In fact, NMAfA is besieged with requests from teachers for pamphlets, brochures, and catalogues that include visual materials such as slides, photographs, posters, and postcards.

The Museum requests an increase of \$50,000 for educational publications. The requested funds will permit curators and education specialists to develop informative, concise, and visually compelling published materials based on the Museum's collections. The Museum wants to make these materials readily available free of charge. They will focus on segments of the collection, not the collection in its totality, exploring issues and ideas such as governance, history, perception, a technology, or a specific cultural context.

With the requested funding, this project will enable the Museum to educate its audience more effectively, invite its public to become fully involved in its mission, and ensure that the Museum provides the broadest kind of public service.

Development Program (1 workyear and \$51,000) - Since it opened on the Mall in 1987, NMAfA has achieved a national status that positions it to undertake successful development. Its image is no longer that of a small endeavor. Rather, NMAfA is an established entity dedicated to sound scholarship, professionalism, and aesthetic excellence. Its fine collection base is in place. The permanent collection supports all the first-level gallery space available and the Museum is now building on its collection's strengths. The Museum is lending works of art and circulating its own exhibitions. Its educational materials are in demand, and it is being asked to assist African museums and to accept fellows and train interns.

The Museum requests an increase of 1 workyear and \$51,000 to support a development officer. The requested funding will enable NMAfA to secure private funding in support of four areas: an automated program for the management of 300,000 images in the Eliot Elisofon Photographic Archives and a publication devoted to the Archives; a program of fellowships and internships, with a special emphasis on minority students; experimental exhibitions and publications that expand knowledge about African art studies; and strengthening of the acquisition endowment fund to assure future collection development.

With the requested funding NMAfA can successfully develop restricted program support. It can also create a mid-level patron constituency from which future gifts can flow.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds come from the Museum's share of net proceeds from the museum shop, courses conducted in cooperation with Washington metropolitan area public education institutions, and allotments. NMAfA uses these funds to provide additional support for the Museum's education and collections acquisition programs, exhibition openings, publications, and travel costs associated with the Museum's commission meetings. In FY 1993, an allotment will also support the salary costs of one employee. In FY 1991, a grant from the Women's Committee of the Smithsonian National Associate Program funded the installation of an FM Assistive Listening System in the Museum's lecture hall. Funds available from the Institution's Collections Acquisition Fund were used in FY 1991 to assist in the purchase of a rare Baga (Guinea) drum. Funds from the Scholarly Studies and Educational Outreach Program, Research Opportunities Fund, and Special Exhibition Fund to support research, education, and exhibition projects are also available.

Restricted Funds - Individuals, foundations, organizations, and corporations contribute these funds in the form of grants and gifts for specific purposes. The Museum receives income from a collections acquisition endowment established in FY 1988, and in FY 1991 funds from this endowment, combined with gifts from individuals and a contribution from the Institution's Collections Acquisition Fund, made the Baga drum purchase possible. A grant from the Shell Oil Company Foundation received in FY 1990 was used to support an academic internship and the publication of a brochure on the Museum's Eliot Elisofon Photographic Archives. A generous pledge over a five-year period, begun in 1988, augments the Museum's Federal publications funds. In FY 1991, a grant from the Aga Khan Trust for Culture, awarded jointly to NMAfA and the Arthur M. Sackler Gallery and administered by the Smithsonian's Office of Sponsored Projects, supported the planning phase of an exhibition project on the art and culture of the Islamic world.

ANACOSTIA MUSEUM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	21	1,159	1	57	-	-	-	-	-	-
FY 1992 Estimate	21	1,217	2	146	-	-	-	-	-	-
FY 1993 Estimate	26	1,429	2	146	-	-	-	-	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Anacostia Museum is a national resource on African-American history and culture. The Museum's exhibitions, scholarly and applied research, historical documentation, and interpretive and educational programs offer scholars and the public the opportunity to study the history of black America from a unique cultural perspective. The Anacostia Museum, a community-based entity, reaches out to nontraditional audiences.

For FY 1993, the Anacostia Museum requests an increase of 5 workyears and \$212,000 for expansion of the education program (2 workyears and \$100,000); establishment of a Public Affairs Division (2 workyears and \$77,000); and increased clerical support (1 workyear and \$35,000).

PROGRAM - The Anacostia Museum serves as a national model for community-based museums across the country. Devoted to the interpretation of the African-American experience in Washington, D.C., Virginia, Maryland, North Carolina, South Carolina, and Georgia, the Museum's unique program of applied research, historical and cultural documentation, exhibitions, and educational outreach provide the public with a multi-faceted approach to greater understanding of African Americans and their contributions to American society. The Museum also focuses on contemporary urban issues and their impact upon African-American communities in Washington, D.C., and the upper South. The Anacostia Museum collaborates with other Smithsonian museums whenever possible and is developing a unique partnership program that calls for collaboration with museums and other historical and cultural organizations in the upper South.

Established in 1967 as a neighborhood museum and serving as a cultural resource for the residents of Washington's Anacostia community, the Museum has developed into one of the country's most influential African-American-focused museums. Today it is a valuable resource on regional African-American history and culture, and it is taking the lead in the documentation of contemporary culture and issues as well as in collecting contemporary material culture. Known for its innovations in introducing nontraditional audiences to museums and their activities, the Anacostia Museum continues to work directly with schools, public and private agencies, and a variety of local arts organizations. The Museum's staff

is actively involved in a number of professional organizations, including the American Association of Museums, the African-American Museums Association, and the American Association for State and Local History.

Research and Collections - Since its founding in 1967, the Museum has documented the history and culture of African Americans and their significant contributions to the heritage of the Nation. During the past few years the Museum's strengthened research program has resulted in exhibitions that have gained international recognition. Several exhibitions have been converted to traveling exhibits and are circulated by the Smithsonian Institution Traveling Exhibition Service.

In FY 1991, a new research and collection focus has turned the Museum's attention to the African-American experience in the Nation's Capital and the nearby states of Virginia, Maryland, North Carolina, South Carolina, and Georgia. This focus allows for a more defined program of collections development, a varied exhibition program, and the opportunity to develop regionally focused projects to serve as models for museums across the country. This focus also allows the Museum to address the historical and cultural origins of many of the black residents of Washington, D.C., as well as other regions of the country.

A new collections management policy allows Anacostia to meet effectively the guidelines and standards established by the Smithsonian. This policy, in conjunction with an increased public awareness of the Museum's collecting goals, will place the Museum in the vanguard of collecting and protecting African-American historical patrimony. Several collections from regional sources are under consideration for inclusion in the Museum's collection.

Cooperation between the Museum and Smithsonian Institution Libraries has resulted in the hiring of a librarian who will work with the collections at the Anacostia Museum and the National Museum of American History. This new position will make the Museum more effective in meeting the research needs of Smithsonian staff and the general public.

During FY 1991, the Museum conducted research that will result in future exhibitions and publications including:

- "To Achieve These Rights: The African-American Struggle for Equal Rights in the District of Columbia, 1791-1991" is scheduled to open in December 1991. Commemorating the bicentennial of the District of Columbia, the exhibit is a unique view of the legal and social struggle by blacks to secure equal rights in the Nation's Capital. It will examine the legal, political, and social interaction of African Americans and their struggle to obtain equal rights through legislative action.
- "Black Mosaic: Community Life and Cultural Exchange in Washington, D.C.," a unique multi-cultural, multi-lingual project, will open in FY 1993. An examination of the contemporary configuration and diversity of Washington's black community, this project will explore the impact of blacks from the Caribbean, South and Central America, and Africa in defining and shaping a unique black cultural environment in the Nation's Capital.

- "Choices: Collecting African-American Material Culture" is an innovative research project designed to create greater public awareness of the issues surrounding the collection of African-American historical and cultural materials. Since many of Anacostia's constituents are nontraditional museum audiences, they are often unaware that their homes, organizations, and neighborhoods are the sources of materials used for museum research and exhibit projects. This project will help to educate a wide audience about the sources of museum collections. It is designed to be a model for adaptation nationally.

Exhibits - The Museum continues to mount exhibitions that attract both local and national media coverage. In FY 1990, the Museum's "Whose Art Is It, Anyway? The Arts in Public Places," offered an innovative examination of public art. It was followed by the critically acclaimed, "Gathered Visions: Selected Works by African-American Women Artists."

Following "To Achieve These Rights," opening in December 1991, the Museum will mount a special exhibit to celebrate its 25th anniversary. This exhibit will open in September 1992.

The Museum has developed a ten-year exhibition plan. Future topics include domestic workers, the Gullah, the African-American press, and folk culture of the upper South.

Education - The Anacostia Museum develops and presents a variety of programs designed to increase public awareness of African-American culture as well as public insight into contemporary urban issues. During FY 1991, the Museum offered lectures, workshops, films, and staff-guided tours of exhibits and facilities. The Museum sponsored more than 150 programs, reaching more than 43,500 people. As part of its outreach program, the Museum has continued publication of a newsletter that began in FY 1990.

Future Development - The Smithsonian Institution remains committed to the future and development of the Anacostia Museum, a unique facility within the system of national museums. Plans are currently being developed for a permanent location to replace the interim facility at Fort Stanton Park. In addition, a new director was appointed in FY 1991, providing new leadership and vision for the future. Particular attention is given to long-term planning, the relationship of the Museum to its resident constituents, the recently approved National African American Museum, and the development of services for citizens in the five-state upper South region. A major focus for the future is the role of the Museum in developing research projects and exhibitions that, though regionally focused, have the potential for national and international replication.

EXPLANATION OF PROGRAM INCREASE: For FY 1993, the Anacostia Museum requests an increase of 5 workyears and \$212,000 for expansion of the education program (2 workyears and \$100,000); establishment of a Public Affairs Division (2 workyears and \$77,000); and increased clerical support (1 workyear and \$35,000).

Education Program (2 workyears and \$100,000) - To address the increased demand for Museum-based educational activities and community outreach, the Anacostia Museum requests two education specialist positions. In conjunction with the bus provided in the FY 1991 appropriation, the positions will serve an expanded visitor population of school and community groups. In addition, an array of community-based educational and cultural organizations will benefit from expanded collaborative training, technical assistance, and educational outreach. The positions will result in additional exhibit related-programs, improve museum visits, and enhanced working relationships with community organizations.

The requested funding of \$100,000 will support the hiring of two education specialists (2 workyears and \$70,000) and support costs (\$30,000) to expand education and related outreach programs of the Museum's Office of Education. One education specialist will develop explanatory brochures and resource guides, text for exhibit labels and panels, and on-site workshops. The other education specialist will develop and implement workshops and training for educational and cultural organizations involved in African-American cultural and historical activities. A revamping of the Museum's volunteer training program will also be the responsibility of this position.

An aggressive educational outreach program has historically been the hallmark of the Anacostia Museum. Additional resources are needed to keep pace with the increased school and community use of the Museum. Additionally, new initiatives such as the Contemporary Communities and Issues Project, Black Mosaic, and the community-based collection campaign make the addition of personnel a necessity. Added resources will allow the Museum to serve larger and more diverse segments of the population.

Public Affairs (2 workyears and \$77,000) - The establishment of a Public Affairs Division at the Anacostia Museum will enhance public knowledge of the Museum's exhibitions, programs, and resources. The division will serve as liaison between the Museum and the media and other units of the Smithsonian Institution. Increased diffusion of information about efforts to protect local and regional African-American culture will allow the public to make better use of Anacostia's unique resources.

The requested funding of \$77,000 will support the hiring of a public affairs specialist (1 workyear and \$42,000) and a video specialist/photographer (1 workyear and \$35,000) to staff the Public Affairs Division, which will report to the Director's Office. The two positions will assist in the preparation of news releases, announcements, newsletters, promotional materials, and specialized photographic and video images of the Museum's programs. The incumbents will also create a more cohesive public image for the Museum in their work with the local and regional press. The video specialist/photographer will document the activities of educational organizations that work with the Anacostia Museum. Additionally, this incumbent will have responsibility for expanding the Museum's oral history interview program. During FY 1993, both positions will be especially important in the effort to make the public aware of the Museum's 25th anniversary and the campaign to increase public knowledge of the function of African-American museums in American society.

New programs, increased demand for information about the Anacostia Museum, and the need for video skills to support research, educational, and public affairs activities make these positions critical to the future development of the Museum.

Clerical Support (1 workyear and \$35,000) - To provide administrative assistance to the Office of Education, the Anacostia Museum requests a secretarial position for the additional education specialists requested elsewhere in this section. The position will result in more effective development of educational materials and support increased contact with schools and community organizations.

This staff member will perform a variety of clerical and support duties, including handling correspondence, answering visitor inquiries, scheduling visits, preparing workshop materials, and assisting in the mailing of educational and training materials.

The requested funding of \$35,000 will provide a secretary at the GS-7 level (1 workyear and \$30,000) as well as support costs (\$5,000).

Increases in the professional staff and increased public contact in the Office of Education make this position essential to the educational outreach efforts of the Anacostia Museum.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Annual allotments support the salary and benefit costs of the director of the Museum and an exhibit specialist as well as trustee travel. Additional funds derived from donations and exhibit rental fees support the Museum's educational programs.

Restricted Funds - Gifts and grants donated from individuals, organizations, and corporations support specific Anacostia Museum projects.

CONSERVATION ANALYTICAL LABORATORY

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	42	2,658	-	-	-	25	-	-	-	-
FY 1992 Estimate	42	2,780	-	-	-	-	-	15	-	-
FY 1993 Estimate	43	3,068	-	-	-	-	-	-	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Conservation Analytical Laboratory (CAL) located at the Museum Support Center in Suitland, Maryland, is the Smithsonian's specialized research facility for the conservation and technical study of museum objects. CAL helps the Smithsonian and other museums in the study, preservation, and conservation of objects of artistic, scientific, cultural, and historical importance. CAL staff examines the conservation-related properties of these materials, extracts historical information from their technical record, and improves conservation treatment technology. Staff conservators apply the knowledge gained from scientific research directly to the actual treatment of objects. Experience with a wide range of materials and expertise in analytical and technological studies enable CAL to engage successfully in collaborative research with anthropologists and art historians. The wide variation in the state of preservation of objects in the National Collections provides the overview needed to define directions in conservation research. CAL also conducts a conservation-training program that includes basic and advanced conservation theory and technique, supports and organizes workshops and seminars, and disseminates the latest knowledge in the field of conservation and cultural materials research to museums and research professionals throughout the United States and the world.

For FY 1993, CAL requests an increase of 1 workyear and \$288,000 to upgrade and replace research equipment (\$200,000) and to develop a research program for the preservation of natural history specimens (1 workyear and \$88,000).

PROGRAM - The major programs of CAL are archaeometry, conservation research, conservation training, and technical information. These programs, while distinctive, share methodologies and requirements for equipment and staff expertise. Hence their integration within CAL produces a strong, positive, mutual reinforcement.

Archaeometry - In this program, physical and natural scientists collaborate with scholars from the arts and humanities to address questions of an art historical or archeological nature. A number of techniques used in these programs require specialized facilities that CAL, in collaborative agreements with the National Institute for Standards and Technology (NIST), operates at the latter institution.

New work in the program on technical studies in art history focused mainly on an initial exploration of the use of digitized image handling and enhancement techniques in the interpretation of autoradiographs, x-radiographs, infrared reflectographs, and other visual representations of information on paintings. This initial work was performed in close collaboration with the staff and using the equipment of the National Archives.

CAL researchers involved in the work on provenance analysis of early Spanish colonial majolica have now directed their attention to material of special interest: ceramics recovered from La Isabella, a settlement on Hispaniola established by Columbus on his second trip in 1493 and occupied until about 1500.

In a collaborative program with the Bunkacho, the Japanese cultural agency, CAL researchers and their Japanese colleagues studied the production technology of a large number of ceramics from the Jomon era, a prehistoric development period in Japan that lasted from 10,000 to 500 B.C.

CAL's researchers in the biogeochemistry program successfully applied the chemical protocols developed last year to actual cases. A striking example was the diagnosis of treponemal disease through the binding of corresponding antigens to the extract from bone material of a Woodlands Native American radiocarbon dated to around 800 A.D.

Conservation Research - Research in this program pursues the identification and characterization of the chemical and physical processes involved in the deterioration of materials in museum collections (conservation science) and the development and evaluation of treatment techniques for unstable collection items (conservation technology). CAL's scientists and conservators address these research questions in collaborative teams.

In collaboration with the National Gallery of Art, the Canadian Conservation Institute, and the Tate Gallery of London, CAL organized an international conference in London to disseminate the results of the joint research performed at these institutions on the effects of packing and transportation of paintings. This research has enabled the accurate prediction of damage for a given painting resulting from specific conditions of shock, vibration, temperature, and humidity, and as a result the formulation of packing conditions that will prevent such damage.

Modern synthetic materials, an ever increasing component of the collections, present new and specific problems in preservation that are studied by CAL researchers. A study of the destructive deterioration observed on the rubber components of National Aeronautics and Space Administration (NASA) spacesuits identified the practice of training astronauts in swimming pools for conditions of weightlessness as the cause of the later deterioration of the suits: the chlorine in the swimming pool water initiated and promoted breakdown processes in the rubber. As the practice continues today, research will now focus on developing treatment and storage conditions that will arrest this degradation process.

Archives nationwide, including those in the Smithsonian, contain large numbers of architectural drawings on special tracing papers. Research in architectural history often requires the use of these original drawings, which, due to the materials and processes involved in their manufacture, are highly subject to deterioration. CAL researchers studied the effects of various treatment techniques on these papers, which are also quite sensitive to the solvent systems used in paper conservation. Their results show good promise that this work will indeed result in the development of safe and effective treatments for these important materials.

The dangers involved in the cleaning and varnish removal on paintings have been a long-standing subject of discussion. CAL researchers continue to study the potential chemical and physical effects of the various commonly used solvent systems. Their initial results show a number of unexpected effects that will be further evaluated. CAL anticipates that this research will contribute to the ability of conservators to make a balanced assessment of risks versus benefits for each individual case.

The analytical services section provided scientific and technical support to conservators and curators throughout the Smithsonian. About 3,600 samples were analyzed, in the context of 350 requests for assistance.

Conservation Training - In addition to the four courses taught as part of the Furniture Conservation Training Program, CAL organized nine advanced courses for conservators on subjects such as mechanics of materials and structure of cultural objects, drying and flattening of paper, modern artist's materials and their conservation implications, identification of natural dyes on historic textiles, exhibition and display materials, and the properties of leather. CAL conservators and scientists taught in the joint CAL - Johns Hopkins University conservation science-training program and supervised the dissertation research performed by the students in this program as part of their Ph.D. requirements.

A new initiative in the internship program was the announcement of two special internships in archeological conservation. These interns, one on the postgraduate and one on the graduate level, will combine supervised work on archeological excavations in the Middle East and Central America with special projects in CAL's objects laboratory for a unique training experience. With financial support from the Samuel H. Kress Foundation, CAL also established a new midcareer internship intended for conservators who have worked for a number of years in the field and who wish to update their expertise through work in CAL's research environment. Six conservators received postgraduate internship training; two graduate students in conservation spent their practical internships at CAL; three preprogram students worked with CAL staff; and four other students trained at CAL during summer internships. Other interns at CAL included a recipient of a Smithsonian minority academic internship in conservation, two students (one on a Smithsonian Native-American internship) who worked in the biogeochemistry laboratory, and an art history student.

Technical Information - CAL's technical information program handled more than 1,200 requests for assistance, about 700 of which came from the general public. The other requests came equally from Smithsonian staff members and from professionals nationwide. The unique collection of reprints from conservation literature was augmented to a total of 25,650, all of which are indexed in the bibliographic data base of the international cooperative Conservation Information Network (CIN). The importance and success of this network, of which CAL is a contributing partner, are clearly illustrated by the total of 240 data base searches performed on it by CAL's information specialists responding to requests from researchers and students both from inside (65 percent) and outside (35 percent) the Smithsonian. CAL's public conservation information program also distributed 300 copies of Pest Management in Museums. Since the book's publication by CAL in 1986, more than 1,500 copies have been sent out on request.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, CAL requests an increase of 1 workyear and \$288,000 to upgrade and replace research equipment (\$200,000) and to develop a research program for the preservation of natural history specimens (1 workyear and \$88,000).

Upgrade and Replacement of Research Equipment (\$200,000) - In recent years, CAL has acquired an international reputation for leadership in the interdisciplinary research areas of archaeometry and conservation. This position manifests itself in, among others, the impressive publication record resulting from projects involving CAL staff and collaborating researchers from universities and museums worldwide. CAL serves as a major study center in these fields, with many scholars and students participating in various opportunities offered at the laboratory.

The research conducted at CAL requires the cyclical replacement of sophisticated scientific equipment to keep pace with methodological advances and technological innovations. While CAL has utilized both Federal and Trust support on many occasions to acquire state-of-the-art instrumentation needed for the pursuit of its scientific activities, its current base resources are insufficient to institute a systematic program of updating and replacing research equipment. Such a program is essential for CAL to maintain its leadership position. In general, scientific equipment has a limited lifetime, after which repair costs can mount to substantial levels and replacement parts become virtually impossible to obtain.

With the requested \$200,000, CAL will initiate a replacement program to update older and obsolete scientific equipment and introduce new analytical technologies into its research programs. Some examples of the equipment that CAL will replace or update are the X-ray fluorescence spectrometer, scanning electron microscope and its analysis attachments, X-ray diffractometer, visual/ultra-violet spectrophotometer, Fourier transform infrared spectrophotometer and infrared microscope, gas and liquid chromatographs, special photographic equipment, and mechanical test equipment.

The Conservation Analytical Laboratory provides a unique setting for interdisciplinary research between the physical sciences and the humanities. Establishing a periodic upgrade and equipment replacement program will safeguard the Laboratory's ability to maintain its leadership and preserve the Nation's cultural heritage.

Preservation of Natural History Specimens (1 workyear and \$88,000) - The Smithsonian's National Museum of Natural History collections are a national resource used by researchers worldwide. Similarly, extensive collections in other natural history museums are important to researchers in the biological and earth sciences. Yet little research has been done on issues affecting the preservation of these priceless and irreplaceable scientific collections.

Preservation of natural history specimens is even more complicated than for other types of museum collections such as works of art. First, the size of scientific collections in a natural history museum is several orders of magnitude larger than that of an average art museum collection, thus rendering the single-object orientation, typical in the latter, unusable. Second, the processing of newly collected biological materials introduces an extra step that can seriously affect the preservation of the specimens. For example, research at CAL has shown how the common practice of processing tissues with formaldehyde seriously affects the potential use of the specimens for molecular biological research. Finally, the research use of these collections severely restricts chemical or other interventions that conservators can use to stabilize them. New biological science research techniques, especially on the molecular level, require the integrity of the original material with no changes in the chemical makeup of the specimens that could affect the outcome of research experiments. Existing preservation treatments do not meet these standards. Consequently, their influence on the later use of specimens is largely unknown,

and new techniques that avoid the potential destruction of research information do not yet exist.

The Conservation Analytical Laboratory, which specializes in research concerning the conservation of museum collections, is uniquely qualified to undertake the urgently needed research into the preservation of natural history specimens. Contacts with natural history collections outside the Smithsonian, as well as with collections in NMNH, have resulted in the formulation of a research program and the establishment of collaborative ties. CAL will hire a scientist (1 workyear and \$60,000) to take responsibility for this research. To provide adequate support for the scientist, CAL also requests \$28,000 to fund supplies, equipment, travel, and contractual services.

This program will produce data that will enable natural history museums across the Nation to make informed decisions on preservation and conservation techniques for processing and managing their unique and often irreplaceable collections. It is expected that in the future the program will grow appreciably, with much research being done by postdoctoral fellows funded through outside support.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These derive from the fees charged to participants in the advanced conservation specialist programs sponsored by CAL. These fees partially offset the expenses incurred in organizing the courses. Funds from the Smithsonian's Scholarly Studies Program and Research Opportunities Fund are available to support research projects.

OFFICE OF EXHIBITS CENTRAL

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	46	2,012	-	-	-	192	-	-	-	-
FY 1992 Estimate	46	2,126	-	-	-	111	-	-	-	-
FY 1993 Estimate	46	2,126	-	-	-	101	-	-	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Office of Exhibits Central (OEC) offers expertise in every phase of exhibit design and production to Smithsonian museums and bureaus. OEC's specialists and state-of-the-art facilities handle all aspects of Smithsonian exhibitions, including design, graphics, models, and fabrication. OEC also designs and builds shipping containers for Smithsonian traveling exhibitions. Exhibition projects involve artifacts both from Smithsonian collections and from other museums and private collections. To improve service to the public and international sponsors, OEC will coordinate Smithsonian exhibition spaces currently not administered by a Smithsonian museum.

OEC is not seeking additional funding for FY 1993 programmatic increases.

PROGRAM - In FY 1991, OEC supported a wide variety of exhibition projects throughout the Smithsonian Institution. Below is a sampling of the kinds of expertise and services OEC provides for Smithsonian museums and bureaus.

At the National Museum of Natural History, OEC prepared the installation design for "Shark - Fact and Fantasy" and produced some additional graphic elements. OEC also refurbished the ostrich diorama in the bird hall. OEC's illustrator repaired the damaged background mural, and its taxidermist repaired the specimen ostrich. OEC also provided a variety of services for the Columbus Quincentenary exhibit, "Seeds of Change." The fabrication unit produced 26 exhibit cases; the graphics unit silk-screened labels for the exhibit cases; and the model shop created a display of potatoes in cast polyurethane resin and prepared ten mannequins and two horses to display costumes. The exhibition script was also edited in OEC.

OEC has been providing continuing support for the new Experimental Gallery in the Arts and Industries Building. An OEC designer redesigned the south hall to accommodate changing exhibitions and coordinated the installations. All of OEC's production units have been involved in the installation of each exhibition to date, providing installation expertise, graphics, and model making.

The Smithsonian Institution Traveling Exhibition Service (SITES) continues to be OEC's largest single client. Highlights from the past year include:

- OEC installed "Moscow: Treasures and Traditions" in the International Gallery.
- OEC designed, edited, and produced "The Real McCoy: African-American Invention and Innovation." Adapted from the Anacostia Museum exhibition, this didactic panel show includes working models of several inventions.
- "The Long Road Up the Hill: Blacks in the U.S. Congress, 1870-1990" was redesigned and updated from the popular exhibition that has been traveling for ten years.
- OEC designed "The Good, the Bad, and the Cuddly: Attitudes Toward Animals," a cooperative project between SITES and the National Zoological Park that opened in the Experimental Gallery. The fabrication unit and model shop made five life-size animal models for the exhibition and produced mechanical interactive devices to enhance the interpretive message.
- In addition to new exhibitions, OEC has dispersed about ten SITES exhibitions that ended their tour and refurbished another six to continue touring.

For the 25th year, OEC provided major support to the Folklife Festival by cutting, painting, mounting photographs, and silk-screening all the graphic panels.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Proceeds from the sale of the OEC book A Freeze-Dry Manual through the Smithsonian Institution Press and reimbursements from internal Smithsonian units provide these funds. OEC uses the funds to purchase supplies, materials, and services in support of OEC activities; to defray costs associated with special events; and to supplement travel expenses.

SMITHSONIAN INSTITUTION TRAVELING EXHIBITION SERVICE

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	44	2,363	8	374	-	2,342	-	1,334	-	44
FY 1992 Estimate	44	2,482	8	374	-	926	-	737	-	1
FY 1993 Estimate	46	2,577	8	374	-	525	-	905	-	2

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Smithsonian Institution Traveling Exhibition Service (SITES) expands the Smithsonian's presence beyond Washington, D.C., by circulating exhibitions to public audiences in museums large and small and in schools, libraries, science centers, historical societies, zoos, aquariums, and community centers. SITES exhibitions reach nearly 11 million people annually in the United States and abroad. A commitment to audience access drives the development of all SITES programs. SITES's top priority is increasing the availability of Smithsonian-created exhibitions among people who cannot see them firsthand by visiting the Institution's museums. Facilitating the sharing of exhibitions created outside the Smithsonian--SITES's second priority--is another way SITES works to respond to diverse program needs and interests.

For FY 1993, SITES requests an increase of 2 workyears and \$95,000 to augment its fund-raising capacity.

PROGRAM - The Smithsonian Institution Traveling Exhibition Service reconfigures and packages for widespread circulation exhibitions developed by Smithsonian museums and program offices and by institutions and organizations outside the Smithsonian. SITES tailors the form and content of these exhibitions to meet the program needs and technical capabilities of diverse museums and cultural and educational facilities worldwide.

In developing exhibitions for audiences of all ages and backgrounds, SITES strives to do more than present artifacts. SITES exhibitions represent a broad range of human perspectives; they pose questions, communicate abstractions, and challenge visitors to make connections among objects, people, places, events, and ideas. By emphasizing diverse viewpoints and by using inquiry as a means of interpreting exhibition themes and images, SITES hopes to encourage people to explore the full breadth of possibilities about themselves, others, and the world around them.

Smithsonian Exhibitions - SITES's FY 1993 program schedule includes eight new Smithsonian exhibitions. Among the most ambitious is "Beyond Category," a Duke Ellington retrospective that combines photographs, computerized audio programs, archival documents,

live performances, and school curriculum guides to highlight one of the Nation's greatest cultural heroes. Developed jointly by SITES and the National Museum of American History, the exhibition will inaugurate a multi-year outreach initiative to bring America's rich jazz heritage to cities and towns across the country.

A collaborative exhibition between SITES and the Cooper-Hewitt Museum features rare maps and instruments. Entitled "Maps: Ways to Read the World," this FY 1993 project explores not only changing cartographic techniques but also the ways people in every time and place have used map making as a design resource to convey information about themselves in relation to the larger world.

A third Institutional collaboration parlays the resources of SITES and the Office of Environmental Awareness in an exhibition called "TRASH!" that addresses America's mounting garbage crisis and suggests what each of us can do to reduce its dangers.

More than 30 Smithsonian-created exhibitions will circulate under SITES's auspices during FY 1993. By sharing information, ideas, and collections from the Institution's museums, as well as from its major research and public program divisions, SITES provides visitors worldwide with a fuller picture of the Smithsonian's scope and vitality.

Exhibition Partnerships - Partnerships with institutions and organizations outside the Smithsonian enable SITES to meet more fully the program needs and interests of the multi-cultural audiences it serves. In FY 1993, for example, 12 SITES exhibitions will explore facets of the African-American experience. One such exhibition, "Long Road Up the Hill," is based on a National Archives project about blacks in the United States Congress between 1870 and 1990. Another exhibition, "Go Forth and Serve," which examines America's historic black colleges, is the result of a partnership between SITES and the National Association of Land Grant Colleges.

A joint initiative between SITES and the Nature Conservancy will make possible the FY 1993 circulation of "Borderlands," an exhibition about the wondrous and complex natural environment at the U.S.-Mexican border. Efforts to introduce North American museum-goers to Mexico's rich artistic heritage, the subject of a FY 1993 exhibition entitled "Capturing the Spirit," stems from a partnership between SITES and Friends of the Arts of Mexico.

FY 1993 includes the first exhibitions in SITES's program to address America's relationship, past and present, with Japan and its people. "Strength and Diversity," SITES's traveling version of an exhibition developed by the Oakland Museum and the National Japanese-American Historical Society, captures the challenge of preserving one's unique cultural heritage within the context of a broader American identity. "Seeing Japan," an exhibit created by the Brattleboro Museum and Art Center, highlights shifting, often contradictory attitudes that historically have characterized American's sentiments about its major Pacific Basin partner.

How people form and reinforce stereotypes about others is the focus of yet another FY 1993 SITES exhibition, "Kid's Bridge." Originally developed by the Boston Children's Museum, the exhibition is tailored especially to youth museums. A second children's exhibition in SITES's FY 1993 program, "Saynday Was Coming Along," features historic Kiowa Indian drawings illustrating time-honored stories about the importance of generosity and sharing.

Exhibition Workshops - Preparatory workshops now play an integral role in SITES's outreach services. Before an exhibition is planned, SITES advertises information about the show's basic thematic focus, physical scope, and financial dimensions to potential host communities. Respondents then book a tentative slot on the exhibition itinerary and agree to attend a three-day workshop with civic leaders and potential sponsors from their local areas, as well as educators, content specialists, designers, and exhibit technicians from the Smithsonian. Together these individuals map out interpretive strategies, presentational formats, fund-raising approaches, and educational programs that capitalize on community resources and community-specific needs.

These workshops are a catalyst for collecting historic artifacts from the community that are later included in the exhibition. This process helps communities provide core story information about their own histories and concerns.

SITES is a high-visibility outreach arm of the Smithsonian. Its programs include 100 exhibitions on myriad subjects covered by the Institution's museums and research scholars. With this budget submission, SITES looks forward to FY 1993 service capabilities that will enable more people than ever before to experience the full range of Smithsonian programs.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, SITES requests an increase of 2 workyears and \$95,000 to augment its fund-raising capacity.

Development Staff (2 workyears and \$95,000) - SITES's national presence carries with it strong fund-raising appeal. Many SITES exhibitions benefit from corporate, foundation, and individual donor support. Earmarked for specific exhibition projects, the funds that SITES raises from outside sponsors offset direct exhibit costs, including construction, silk-screening, photography, framing, crate-building, typography, and catalogue printing.

At present only one SITES employee, the director, carries out the research, proposal writing, solicitation, and follow-up communication required to generate exhibition sponsorship. SITES's fund-raising capacity therefore is restricted by the amount of time one individual can devote to development initiatives. With the addition of development staff, SITES will be able to boost its ability to respond expeditiously to fund-raising inquiries, develop fund-raising proposals, and monitor fund-raising solicitations.

The requested resources will provide for a development coordinator (1 workyear and \$60,000) to research and identify potential corporate, foundation, and individual sponsors to support approximately 15 traveling exhibitions annually. The coordinator will initiate contact with prospective sponsors and prepare exhibition-specific fund-raising proposals tailored to their philanthropic objectives. An assistant development coordinator (1 workyear and \$35,000) will handle routine donor information requests and correspondence, participate in editing exhibition project descriptions, and compile the budget figures and visuals necessary to complete final proposal packages. Both employees will provide key donor information in advance of formal project presentations and direct solicitation efforts--tasks that will remain the responsibility of the director.

SITES offers attractive philanthropic opportunities as its programs reach cities and towns in every state across the Nation. With appropriate staff support, SITES could capitalize on this national visibility, generating exhibit production funds that reduce exhibit rental fees. Every dollar SITES raises results in more affordable traveling

exhibitions, which in turn guarantee that greater numbers of people benefit from the Smithsonian's presence beyond Washington.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - One-third of SITES's annual operating budget comes from rental fees collected from museums and other recipients of traveling exhibitions. These fees, supplemented by an allotment, support exhibition development costs including design and production, publications, materials, outside specialists, and contractual services. The Smithsonian also supports certain SITES exhibitions on a selective basis with monies from the Special Exhibition Fund.

Restricted Funds - Individuals, organizations, and corporations donate gifts and foundation grants for specific SITES exhibitions. During FY 1991, SITES received support from the MacArthur Foundation for host museum programs developed in conjunction with SITES's tour of "Tropical Rainforests: A Disappearing Treasure"; from Philip Morris Incorporated for an exhibition about the restoration of Michelangelo's Sistine Chapel; from Time Warner, Inc. for "Songs of My People"; from the Nature Conservancy for "Borderlands"; from the Brand Names Education Foundation for "Making Your Mark: Commercial Symbols in a Mass Consumption Society"; and from the Lila Wallace - Reader's Digest Fund for "Beyond Category: The Musical Genius of Duke Ellington."

MUSEUM SUPPORT CENTER

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	42	4,306	-	-	-	-	-	-	-	-
FY 1992 Estimate	42	5,403	-	-	-	-	-	-	-	-
FY 1993 Estimate	93	12,359	-	-	-	-	-	-	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Museum Support Center (MSC), located in Suitland, Maryland, is a specially equipped and environmentally controlled facility providing "state-of-the-art" technology for scientific research, conservation, and collections storage. MSC accommodates collections storage in four sections (or pods) for three types of needs: collections storage in cabinets, "wet" collections storage on open shelving for biological specimens in alcohol, and "high-bay" storage for very large objects. MSC also houses the Conservation Analytical Laboratory (CAL) and conservation laboratories for the National Museum of Natural History (NMNH) and the National Museum of American History (NMAH), the NMNH Laboratory for Molecular Systematics, and other NMNH specialized research laboratories. MSC's facilities provide the best conditions possible for preservation of the National Collections for future generations.

For FY 1993, the Institution requests total funding of 93 workyears and \$12.359 million for the Museum Support Center, including the purchase of collection storage equipment (\$7.859 million); the preparation and transfer of collections to MSC (56 workyears and \$1.9 million); and the ongoing administration, information management, and facility management activities (37 workyears and \$1.593 million). In addition, funding is included to make the second of three annual payments required to reimburse the permanent Judgment Fund of the U.S. Treasury in compliance with a vendor judgment relating to the purchase of equipment for the Museum Support Center facilities. The Institution requests that the funding for MSC collections storage equipment and for MSC move costs continue to remain available until expended (for FY 1993, this sum totals \$9.759 million of this request).

The FY 1993 request includes the following increases above the FY 1992 level: an increase of 50 workyears and \$1.475 million for MSC Move costs (over the FY 1992 base of 6 workyears and \$425,000); an increase of \$5.025 million for MSC collections storage equipment (over the FY 1992 base of \$2.834 million); and an increase of 1 workyear and \$456,000 for MSC operations (over the FY 1992 base of 36 workyears and \$1.137 million). The 50 workyears requested for the MSC Move includes 11 workyears associated with base funding used for the personnel costs of temporary on-board positions for the Move.

PROGRAM - The Institution's Museum Support Center provides state-of-the-art facilities for the conservation and preservation of museum objects, scientific research, and the storage of museum collections. New, specially designed, state-of-the-art storage equipment is now available at MSC to house collections.

The unique design of the MSC creates two wings (a laboratory wing and a storage wing) on either side of a central corridor. Conservation facilities occupy a significant portion of the laboratory wing, and their activities include conservation treatment, scientific analysis, and training. The Conservation Analytical Laboratory (CAL), the Anthropology Conservation Laboratory of the National Museum of Natural History, and some of the facilities of the Division of Conservation of the National Museum of American History are at the MSC. The Museum Support Center branch of the Smithsonian Institution Libraries system, one of five conservation libraries in the world and the only one in this country that provides a reference service on conservation, maintains a collection of more than 15,000 books and 186 periodical titles.

The Smithsonian Oceanographic Sorting Center, a specialized research and service unit of the National Museum of Natural History, also occupies space in the laboratory wing. The Sorting Center sorts and classifies animals and plants which oceanographic expeditions collect, and then distributes these specimens to scientists around the world.

Since FY 1988, the National Museum of Natural History's new laboratory for Molecular Systematics has been located at the Museum Support Center. This laboratory builds upon the Museum's broad expertise in systematic and evolutionary biology and incorporates historical and ecological perspectives. It will enable molecular study of the genetics of organisms by the largest single team of systematic biologists in the world. The laboratory will focus on DNA molecular analysis.

The Museum Support Center Operations' staff provides a variety of facility services to these occupants and supplies computer services to the MSC Move staff, building occupants, and the Institution.

The MSC storage wing consists of four storage pods, each approximately the size of a football field and 28 feet high. Collections stored in cabinets on three levels of concrete decks will occupy approximately five-eighths of the total storage space (Pods 1 and 2, and a portion of Pod 4). In addition, Pod 3 provides open shelving storage for "wet" collections (those in alcohol), and a portion of Pod 4 will allow "high-bay" storage for very large objects.

The size and scope of the move of Smithsonian collections to the Museum Support Center, including the preparation and relocation of millions of objects and specimens from several curatorial departments in two different museums, is unprecedented in the museum world. From the beginning of planning for the relocation of collections to the MSC, the Smithsonian has divided the move into two phases: (1) the "Initial Move" phase, during which two-thirds of the storage space would be filled at the time of the initial occupancy period; and (2) the "Growth Move" phase, during which the remaining one-third of the storage space would be filled as these collections grow.

The Smithsonian coordinates all the Move activities using an automated project management system for complex projects. The MSC Move staff inspects the objects for pests and conservation problems, cleans them, and stabilizes them prior to their move. The collections relocated to MSC are properly curated, less crowded, and subject to better

controlled environmental conditions than collections in most other Smithsonian storage areas. As a result, they have far better prospects for long-term preservation and will be significantly more accessible to researchers.

The volume, characteristics, and variety of the collections and the distance of the transfer pose special challenges that must be addressed as part of the move. A significant complication, which had not been anticipated in the original move planning, is the extent to which the collections to be moved have been contaminated by asbestos as a result of being stored in their present inadequate environmental conditions. For example, Native-American objects are currently stored in the Natural History Building's attics, which have exposed asbestos insulation. Native-American craftspeople and researchers have been eager to study these collections for several years, but until the staff and other resources necessary to remove the asbestos from these objects are available, the Institution cannot make them accessible for study.

The collections storage areas of the Museum Support Center are not as yet fully occupied. Even though the MSC was opened in 1983, and the initial portion of Pod 3 equipment was installed in 1984, several major problems related to the design and manufacture of collections storage equipment for the remaining three of the MSC's four storage pods (finally resulting in the default of the original contractor in 1987) have prevented the full utilization of its storage space to date.

Progress began again in 1988 with the awarding of the contract to install concrete decks and utilities, and has continued in 1989-1991 with the awarding of several contracts as part of the reprocurement of the collections storage cabinets covered under the original contract. With the completion of the funding for this reprocurement in FY 1991, the Institution will continue to transfer previously-identified "Initial Move" collections from the National Museum of Natural History and the National Museum of American History to permanent storage at the MSC, while at the same time procuring the balance of the storage equipment required to fully utilize the MSC.

However, although the Institution has begun moving some collections into the available cabinets, it does not have sufficient funds to support the expanded MSC move activity that is now possible. With the current level of base funds (\$425,000 for FY 1992), it would take more than 14 years to accomplish the "Initial Move."

I. FY 1991 Move Activity Highlights. - During FY 1991, the move of collections from NMAH to MSC continued within the limitations of the current base funding for the Move. Because MSC Move funding was not sufficient by itself to continue this move in FY 1991, NMAH had to supplement MSC Move funding by redirecting its own program operating funds to avoid delaying its Major Capital Renewal Project and incurring delay claim expenses. NMAH hired technicians to pack and move 800 textile patent models from the Museum's Department of Social and Cultural History.

NMNH continues to move collections with the assistance of the small Move staff. Approximately 15,800 objects from the African, Asian, and North American collections were moved, creating space to house the Native-American repatriation staff presently being hired. Other collections moved included 93,000 insects, 500 herbarium specimens, 5 marine mammals, and 4,700 reptiles and amphibians. In addition, many collections already moved to MSC and stored in temporary locations were relocated to their final storage destinations in the pods.

II. MSC Collections Storage Equipment - MSC stores collections in cabinets on three levels of concrete decks in Pods 1, 2, and half of Pod 4. Pod 3 provides three levels of shelving for storing fluid-preserved ("wet") collections. MSC will store oversized objects in a specially designed "high-bay" storage system in the other half of Pod 4.

Since FY 1989, the General Services Administration (GSA) has awarded contracts for six reprocurement packages that provide the majority of the storage equipment required to relocate the Initial Move high-density collections to MSC. By July 31, 1991, the contractor had installed 2,595 shelving cabinets, 3,827 drawer cabinets, 16,473 drawers, 7,603 shelves, 764 insect cabinets, and 608 botany cabinets.

GSA is completing plans to solicit two additional reprocurement bids for collections storage equipment: one for large drawer and shelving cabinets and one for specialized fencing storage units. GSA anticipates completion of manufacture and installation during FY 1993 of all reprocurement storage equipment packages for the Initial Move.

III. MSC Operations: Administration and Facility Management - The MSC Office of the Director coordinates activities of the various users and MSC support offices and programs; oversees the automated data-processing center used for registration and other collections management data, including the Move to the MSC; and arranges services to meet the research and informational requirements of MSC occupants. The MSC Office of Facility Management is responsible for providing shipping and receiving services, moving equipment and objects, overseeing safety and security operations, and cleaning and maintaining all aspects of the building.

The MSC Office of Information Management operates the MSC computer, which supports a variety of Institutional systems for research, collections management, communications, and other administrative functions. The Office has promoted the efficient exchange of research and museum-related information between museums and cultural organizations through the use of electronic media and networks. Of particular significance is the MSC Move invoice system, which controls the Initial Move of more than 36 million specimens into MSC.

The MSC Safety Program monitors potentially hazardous research and conservation activities. With Repair and Restoration funding, the Institution has installed a new, specially equipped hazardous waste storage facility and completed an analysis of MSC's indoor air quality to ensure compliance with the latest standards for both human safety and collections care. The MSC Integrated Pest Management Program has prevented the development of pest infestations that could be harmful to the collections without the use of potentially hazardous chemicals and pesticides.

EXPLANATION OF PROGRAM INCREASE - The FY 1993 request includes the following increases above the FY 1992 level: an increase of 50 workyears and \$1.475 million for MSC Move costs (over the FY 1992 base of 6 workyears and \$425,000); an increase of \$5.025 million for MSC collections storage equipment (over the FY 1992 base of \$2.834 million); and an increase of 1 workyear and \$456,000 for MSC operations (over the FY 1992 base of 36 workyears and \$1.137 million). The 50 workyears requested for the MSC Move includes 11 workyears associated with base funding used for the personnel costs of temporary on-board positions for the Move.

I. MSC Move Requirements (50 workyears and \$1,475,000) - With the improved environmental and storage conditions at MSC, as well as the cleaning and stabilizing

received in preparation for the Move, the collections will be better preserved for future generations of museum visitors, educators, and researchers. Support for the Move will allow the National Collections to survive and continue to serve the public.

Some collections, including tropical plants and mammal specimens, are in immediate danger of complete deterioration in the poor environmental conditions at the Suitland Facility and the Smithsonian Institution Service Center. Collections relocated to MSC will be stabilized and made accessible to researchers. Among the collections needing relocation are specimens currently stored in the Natural History Building's attics, which have exposed asbestos insulation. Many of these specimens represent species at risk of extinction through continued human impact on the planet. With the destruction of certain ecosystems, these specimens will become increasingly important for the study of biodiversity, the effects of pollution, and the physical destruction of the Earth's environment.

A timely and expeditious Move to MSC will greatly benefit the Institution's renovation projects. The Major Capital Renewal Project at the Natural History Building will replace a 30-year-old mechanical system that has outlived its normal life span, breaks down regularly, and is expensive to maintain. The Smithsonian staff and the contract designer assumed, during the planning of this renovation project, that additional resources would become available for the MSC Move in order to keep the Major Capital Renewal Project on schedule. Unfortunately, sufficient MSC Move resources have not become available to assure compatibility between the rate that collections leave the building and the rate of planned (and funded) Major Capital Renewal work.

For the Natural History Building's Major Capital Renewal Project to proceed on schedule, the Smithsonian must move, by mid-FY 1994, those collections presently stored in the Museum's three attics. It must also move other collections from other locations within the Natural History Building to MSC to assure that the renovation project proceeds without delay. Current base resources are totally inadequate to support the necessary Move activity. Only with significantly higher funding levels for the Move in FY 1993 through FY 1995 can the collections be relocated in a timely fashion to MSC. Once these collections are at MSC, the contractor can remove asbestos from the three attics. The contractor can then use two of these attics, as well as other vacated locations, as "swing spaces" to house temporarily relocated staff and/or collections. Once the staff and/or collections are relocated to these temporary locations, the contractor can then make the necessary mechanical renovations throughout the rest of the building. Any delay in moving these collections to MSC will delay the Major Capital Renewal Project significantly.

The focus of the Move in FY 1992 and FY 1993 will be on collections that are stored in locations where Major Capital Renewal Projects are scheduled to begin, on high-priority collections, and on collections that will take a long time to move, including NMNH's Departments of Anthropology, Vertebrate Zoology, and Entomology, and NMAH's two departments. Over time, the Institution will move collections from all divisions of the seven departments of NMNH. In addition, at the appropriate time, those collections still in temporary storage at MSC will be relocated into their permanent storage equipment. The Institution also will relocate existing collection storage cabinets from the NMNH to MSC for storing collections of the Departments of Mineral Sciences, Invertebrate Zoology, and Paleobiology.

Although the Institution started moving collections into the more than 7,700 cabinets available at MSC in FY 1990 and FY 1991, it does not have sufficient resources to relocate

significant numbers of collections from the Mall to MSC. MSC Move base funds total \$425,000. This base covers a small core staff to administer, oversee, and assure quality control for Move activities; a few Move technicians; and a minimal amount for necessary supplies and equipment related to relocation activities. These limited funds and personnel will be used to complete as much of the relocation of collections as possible in FY 1992. With the current level of base funds, however, it will take 14 years to accomplish the Move.

Funding is requested in FY 1993 to conduct the Move with a large enough staff to make it quick and efficient. The increase will allow the Institution to hire museum specialists, technicians, conservators, and administrative support staff that will support the expanded Move activities projected for FY 1993 and the following years. The Institution may also contract some work, such as conservation and asbestos decontamination, to outside individuals or firms. The specialists and technicians will inspect, clean, decontaminate, invoice, stabilize, pack, transport, unpack, and place collections into permanent storage equipment at MSC. The conservators will develop handling and packaging procedures and train the Move staff to use them. Conservation supplies will be purchased to relocate and permanently house the objects at MSC. The administrative support staff will procure the necessary supplies and equipment, coordinate the logistics, continue the planning, monitor the progress of the Move against the proposed schedule, and revise the schedule as necessary.

To date, the Smithsonian has focused on the Initial Move into the high-density storage equipment. During this time, however, the collections have continued to grow. As a result, the distinction between those collections designated for the Initial Move and those collections targeted for the future Growth Move has blurred. The Institution has begun to conduct a small amount of Growth Move activity prior to completing the Initial Move activity. The Institution expects to require additional funding for the Growth Move activities before FY 1995. At the appropriate time, the Institution will explore the needs for the Growth Move in more detail.

The Move will enable the Institution to relocate collections to MSC, thereby providing for their proper care. It will also allow improved care for those collections remaining on the Mall because they will no longer will be overcrowded. Finally, it will vacate the space necessary for the Major Capital Renewal Projects in NMAH and NMNH to proceed in an efficient manner and on schedule.

II. MSC Collections Storage Equipment Requirements (\$5,025,000) - The continued acquisition of collections storage equipment at MSC will provide for the growth of collections that has occurred in the National Museum of Natural History since the Initial Move was delineated in the early 1980s and for additional growth that will occur over the next decade. Designated as Growth equipment, this equipment will enable NMNH to provide optimum care for its collections by preventing overcrowding both on the Mall and at MSC.

Following the completion of the reprourement of the Initial Move storage and the procurement of the "high-bay" equipment, the Institution must address the two remaining storage requirements. These are the design, purchase, and installation of:

- the balance of the "wet" collections storage equipment for Pod 3;
- the balance of the collections storage cabinets for Pods 2 and 4.

"Wet" Collections Storage Equipment for Growth Areas in Pod 3 - The Smithsonian completed the Initial Move of "wet" collections in 1985. Within the next six years, the Institution plans to purchase additional "wet" storage equipment to occupy the balance of the Growth storage areas of Pod 3. The installation of the additional "wet" storage system will require metal columns, catwalks, and all utilities for the three-level, self-supporting structure of open shelving. The first phase of this work will require the services of an architectural/engineering firm to provide a design and procurement cost estimate.

The current preliminary estimate for completing the Growth storage equipment in Pod 3 ranges from \$6.9 to \$9.0 million. The \$6.9 million estimate is based on cost data for the design, management, inspection, and construction costs of the first part of the "wet" storage system installed in 1983, adjusted to include inflation at the rate of 6 percent per annum. The \$9.0 million estimate takes into account that the storage equipment for the Growth areas in Pod 3 will be more complicated than the original equipment, resulting in higher costs. Following the design work of an architectural/engineering firm, the Institution can provide a more accurate estimate of total cost, including an appropriate factor for inflation.

Collections Storage Cabinets for Growth Areas in Pods 2 and 4 - After the installation of the Initial Move storage equipment in Pods 2 and 4, the Institution plans in FY 1991 to begin to purchase and install some storage equipment for the Growth areas in these two pods. At this time, the Institution cannot determine all of the various types of cabinets or the specific number of drawers and other equipment it will require, nor can it determine the specific timetable for the installation of the Growth storage equipment. Preliminary cost estimates for the procurement of collections storage equipment for the high-density Growth areas in Pods 2 and 4 total as much as \$12.5 million, without taking escalation into account.

In addition to the purchase of cabinets for the Growth space, the Institution will eventually need new steel cabinets to replace a large number of NMNH's existing wood-frame cabinets and drawers, which it is relocating to the MSC as part of the Initial Move. The new cabinets, which will be six inches deeper than the existing cabinets, will permit the Smithsonian to make more efficient use of the available storage space at MSC. Moreover, since the acid in the wood-frame cabinets is deleterious to many of the objects stored in them, replacement with new metal cabinets will provide a better long-term storage environment. Cost estimates for this replacement total as much as \$5.4 million, without taking escalation into account.

In summary, the Institution estimates that the procurement of new cabinets for Growth high-density areas and the replacement of the existing wood-frame cabinets will require as much as \$18 million (in 1991 dollars), without taking escalation into account. Assuming escalation calculated at 10 percent per year and procurement of these cabinets in FY 1993 and FY 1994, the cost to complete the high-density storage equipment (after the Initial Move) will total \$24 million. Two factors that may cause this preliminary cost estimate to fluctuate are inflation and the actual numbers and types of cabinets, shelves, and drawers procured, if they differ from the ones predicted in the preliminary cost estimates, since estimates are based on the Initial Move procurements.

A window of opportunity remains open to the Smithsonian to purchase these cabinets under a current contract for a set price, including a ceiling for annual escalation costs above the base price. Under the terms of this contract, the Smithsonian must order these

cabinets by FY 1994 or pay higher prices.

In FY 1994 and FY 1995, the Institution expects to request funding of approximately \$8 million each year to continue the purchase of this equipment. In FY 1996, \$6 million and, in FY 1997, \$2 million will be requested for this purpose.

In FY 1993, the acquisition of some of the Growth storage equipment for MSC will help to ensure the proper storage and care of the National Collections.

III. MSC Operations Requirements (1 workyear and \$456,000):

Facility Safety Management (1 workyear and \$71,000) - The MSC manages a facility safety program to ensure compliance with all Federal, state, and local government regulations and provide a safe and healthy working environment. It manages the disposal of all potentially hazardous waste that results from normal facility maintenance, conversation, and research activities. The program coordinates the use and disposal of alcohol, solvents, oil, cleaning agents, and other chemicals. It conducts inspections to make sure all electrical and mechanical equipment, including x-ray and other radiographic technology, issued properly and is in good working order. It monitors air flow and exhaust systems to record internal air quality standards. The program sets standards for documenting safety-related conditions to provide accountability for all activities.

The management of a facility safety program requires specialized skills and knowledge. The individual responsible must know all current regulations, understand basic industrial hygiene, and comprehend the sophisticated research, conservation, and collections management processes that take place within a museum environment. MSC will use the funds requested to hire a specialized safety coordinator (1 workyear and \$51,000) to manage the MSC safety program and \$20,000 for related equipment and supplies. Because of the increasing complexity of the regulations and the new, sophisticated techniques for collections-related research and conservation, MSC needs the assistance of a specially trained individual to manage the safety program.

MSC contains some of the most sophisticated conservation and analytical research laboratories found in any museum in the world. A well-managed facility safety program is essential to ensure the safety of all people working in this facility and to protect the public and the general environment from potential hazards resulting from the normal use of chemicals and research technologies.

Automated Information Management (\$385,000) - MSC provides both basic and specialized computer services to its occupants and to the rest of the Institution. MSC's computer provides computer programs that support administration, research, conservation, and collections management. It also provides integrated electronic mail services, including direct access to local and international network systems. It supports a variety of research programs for scientists, conservation data bases for conservators, accounting and management control systems for administrators, and collections information systems for collections management and accountability. MSC also runs the Move Information System, Tracking and Inventory Control (MISTIC) program, which controls and documents the move of collections into the facility. The work of the Institution is dependent upon modern, efficient computer technology.

The MSC computer will be more than 11 years old in 1993 and by all standards will

have exceeded its normal lifespan. Replacement is the most cost-effective and efficient solution to the problems of increased maintenance costs, small capacity (by current standards), and inability to support newer, expanded applications. The growing demand of users for new programs and communications systems, including connection to the international network, requires a newer, more powerful computer.

The MSC will use requested funds to replace the computer with a newer, more efficient, and cost-effective model in order to continue to meet the growing information management needs of the Institution.

The single most important task of the Institution, whose fundamental mission is the increase and diffusion of knowledge, is the efficient management of information. MSC is a vital part of this mission, providing information management services throughout the Institution. Modern computer technology is essential to accomplish this mission. The expanded level of computer support for automated information management will enable the Institution to better preserve and disseminate information and promote the use of the National Collections for the benefit of current and future generations.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - An allotment has supported the purchase of special laboratory equipment for the Conservation Analytical Laboratory.

PUBLIC SERVICE

ASSISTANT SECRETARY FOR PUBLIC SERVICE

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	27	1,680	44	2,659	-	42	-	223	-	-
FY 1992 Estimate	27	1,774	46	2,739	-	104	-	246	-	-
FY 1993 Estimate	31	2,102	46	2,739	-	144	-	89	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Office of the Assistant Secretary for Public Service encourages program initiatives that advance the Institution's objectives in education and information through multi-media publications, folklife programs, the development of wider audiences, and celebrations focused on the achievements and contributions of women and ethnic minority groups. The Office advises the Secretary on general public service policy issues and program planning. This line-item includes the Smithsonian Office of Wider Audience Development (SOWAD), which advises and assists Smithsonian managers on management policies as they relate to minority audience participation in exhibitions and other public programs; the Office of Telecommunications (OTC), which produces programs for radio, film, and television relating to Smithsonian research activities; the Visitor Information and Associates' Reception Center (VIARC), which coordinates and provides Institution-wide information, orientation, and assistance programs; and the Office of Public Affairs (OPA), which publicizes the Institution's exhibits, public events, and research and acquaints the public with the Institution's programs and policies through contacts with news and other media organizations.

For FY 1993, the Office of the Assistant Secretary for Public Service requests an increase of 4 workyears and \$328,000 for administrative support for its immediate office (2 workyears and \$120,000); for administrative support for the Smithsonian Office of Wider Audience Development (1 workyear and \$41,000); for the Smithsonian Information Center's interactive video and electronic components maintenance (\$70,000), Smithsonian Information Center maintenance and repair (\$20,000), and printing and reproduction (\$15,000) for the Visitor Information and Associates' Reception Center; and an Asian-American outreach specialist and support costs for the Office of Public Affairs (1 workyear and \$62,000).

PROGRAM:

I. Office of the Assistant Secretary for Public Service - With base funding of 4 workyears and \$307,000, the Office of the Assistant Secretary for Public Service focuses on matters relating to pan-Institutional interests, goals in education, facilitation and

advocacy of cultural diversity and cultural equity, wider audience initiatives, and public service policies in the central planning, development, and oversight of all Public Service programs and activities of the Institution. The Office and the offices it oversees maintain liaison with the various ethnic committees in the Institution and collaborate with bureaus and offices to address issues of cultural diversity and equity in research, documentation, and public presentation. They disseminate information on the Smithsonian to broad national audiences, plan and execute formal and informal educational outreach efforts, and engage in research and documentation of living cultures. In cooperation with the Smithsonian African-American Association, Asian-Pacific American Group, Latino Working Committee, and other ethnic committees, they develop and execute outreach programs that bring diverse cultural communities and professional sectors to the Institution. The offices reporting to the Assistant Secretary include the Smithsonian Office of Wider Audience Development, the Visitor Information and Associates' Reception Center, and the Office of Public Affairs, the Office of Folklife Programs, the Office of Elementary and Secondary Education, the National Science Resources Center, and the Office of Conference Services. Although still reflected within the Public Service section for presentation purposes, OTC is now organizationally placed under the Assistant Secretary for External Affairs.

II. Smithsonian Office of Wider Audience Development - With base funding of 1 workyear and \$45,000, SOWAD coordinates initiatives within the central administration to promote cultural diversity and equity. SOWAD plans federally designated commemorations of ethnic and women's heritage; provides technical assistance to Smithsonian bureaus and offices to strengthen ties with nontraditional audiences; conducts local and national outreach to organizations, networks, and key individuals concerned with issues-related cultural diversity; and assists the Smithsonian Institution Cultural Education Committee and staff advocacy groups in their efforts to enhance the presence and participation of underserved communities.

III. Office of Telecommunications - With base funding of 6 workyears and \$360,000, OTC produces programs for radio and television relating to a variety of Smithsonian research and scholarly activities. Distributed nationwide, these programs are an important part of Smithsonian outreach, as they support and interpret the research, exhibition, and education goals of the museums.

In FY 1991, OTC completed Our Biosphere: The Earth in Our Hands. Narrated by Robert Redford, this film explores the pioneering work of the Smithsonian's Marine Systems Laboratory and its contribution to the building of the Biosphere II "closed ecosystem" in Arizona. The film premiered nationally on the Discovery Channel and is now available on videocassette.

The Office took part in developing a major television project titled "Earth Game," in which leading statesmen, scientists, and economists gather to deal with a simulated environmental crisis. OTC coordinated a rigorous research effort to create scientifically valid scenarios for the game. Plans are under way to tape the program at the Naval War College in Newport, Rhode Island, in February 1992, and broadcast is tentatively set for the spring. Partners in the project are public TV stations WQED and BBC Television.

"Dream Windows," an hour-long film that explores the importance of gardens to Japanese culture, moved through complex preproduction and scripting to principal photography in Japan. Editing is in progress, and OTC expects to complete the project in the spring of 1992.

After 20 years on nationwide radio as a weekly half-hour magazine show, "Radio Smithsonian" announced new program initiatives beginning in December 1990. First on the air were two specials: "The Louis Armstrong Jazz Trumpet Competition" hosted by Bill Cosby, a co-production with WETA-FM broadcast over 162 stations, and a concert featuring the world-renowned Smithsonian Chamber Orchestra and Chorus performing J. S. Bach's Christmas Oratorio, carried by 110 stations. "Cole Porter's 100th Birthday All-Star Gala Celebration," a co-production with WETA-FM and Carnegie Hall, aired in June 1991. It will be rebroadcast later this year by American Public Radio as its centerpiece offering for American Music Week.

Among new co-productions from Radio Smithsonian were "Folk Masters," 13 folk music concerts presented at New York's Carnegie Hall. Co-produced with WETA-FM, the series was carried by 162 stations. "Speakers Corner," 52 weekly lectures in the arts, humanities, public affairs, and the sciences, is a co-production with the William Benton Broadcast Project of the University of Chicago. Hosted by Roger Mudd, this new series debuted in July 1991 and is already carried on 140 stations. "Spirits of the Present," the new series focusing on American Indians, is in co-production with the Native-American Public Broadcasting Consortium, for broadcast starting in early 1992. These collaborations represent a new direction for Radio Smithsonian, which had been the sole producer of the previous magazine series. A variety of broadcast partnerships allows the programs to focus on specific topics in greater depth and give greater freedom in presenting musical performances.

OTC completed the video "Moving America's Mail," the first program produced for the National Postal History and Philatelic Museum, opening in 1993. The Museum has asked OTC to oversee production of another 15-20 videos for this facility. The Office produced an interactive video component for an exhibition celebrating the 300th anniversary of the first paper mill in the United States. Produced for the National Museum of American History's Division of Graphic Arts, the video helps visitors understand the complex process of papermaking. "Human Attitudes Towards Animals," a 5-minute video produced by OTC for the National Zoological Park, will be part of an upcoming Experimental Gallery exhibition and will tour the country. The Office also produced two videos for the Columbus Quincentenary exhibition, "Seeds of Change," at the National Museum of Natural History. Both videos deal with legacy of cross-cultural encounters: "Crow Fair" shows the importance of the horse in Plains Indian culture; "Montserrat" portrays the mix of cultures on a tiny Caribbean island that once depended on sugar production.

OTC designed and implemented marketing strategies for a wide range of programming, including promotion of the previously cited radio series and specials. By collaborating with its production partners, the Office was able to expand its radio promotions through special events, direct mail, and telemarketing. OTC continued its efforts to increase sales of home videos by contracting with Public Media, Inc., as national distributor of the Smithsonian Video Collection, which now numbers seven programs. The Office's marketing efforts led to increased demand for the 20-minute video "Guide to the Smithsonian," which is now on sale in all museum shops and the Smithsonian Information Center.

The Office also devoted considerable effort to meeting the electronic media needs of Smithsonian bureaus and offices. Services ranged from consultations on program planning and budgeting to videocassette dubbing, videotaping of events, and rough-cut editing of a wide array of programs.

IV. Visitor Information and Associates' Reception Center - With base funding of 2 workyears and \$189,000, VIARC is a central unit responsible for Institution-wide information and assistance programs for the public, Associate members, Smithsonian staff, and volunteers. Operating seven days a week, the Center's programs involve coordinating and directing large numbers of volunteers, who constitute a primary source of support for the Institution's public information programs and for project assistance behind-the-scenes.

-- Visitor Information Services - In its second year of operation, the Smithsonian Information Center located in the Castle has served more than 2.5 million visitors. Created entirely with private funds, the Center continues to provide a multi-faceted information and orientation program designed to assist visitors in planning their Smithsonian agenda and touring other popular Capital attractions. It opens daily at 9 A.M. Highlights include two orientation theaters featuring an award-winning, 20-minute video overview of the Institution; interactive touch-screen programs on the Smithsonian in seven languages; scale models of Washington's monumental core; electronic wall maps and interactive touch-screen programs highlighting popular Capital attractions; printed guides in seven languages; and volunteer information specialists to answer questions and provide direction.

To maintain seven-day staffing levels at 16 information desks in 11 Smithsonian buildings and to operate the information center require the participation of more than 600 volunteer information specialists. Recruitment efforts to attract volunteers from culturally diverse backgrounds continued and resulted in an average 22 percent representation rate for ethnic minorities in training classes to date. A pilot training program was created for D.C. area teachers that provided in-service credit as well as instruction on how to use the Smithsonian for curriculum development in return for teacher participation as volunteer information specialists during the summer months and holidays.

Docent-led tours of the Castle's public areas flourished and were extended to include Fridays. Additionally, to promote previsit education, VIARC conducted outreach to local, national, and international audiences through active participation in tour and travel marketplaces, meetings, and conferences.

-- Public Inquiry Mail and Telephone Information Services - Automated office systems continued to streamline response to mail and telephone inquiries. Some 47,000 pieces of correspondence and 337,000 telephone inquiries were handled in FY 1990 by VIARC staff and volunteers. On-line research tools were expanded and are now available to multiple users. Recorded information on the Smithsonian's various ethnic celebrations and events supplemented daily Dial-a-Museum and Dial-a-Phenomenon recordings.

-- Publications and Other Information Resources - Use of upgraded software programs and enhanced graphics capabilities increased the efficiency and productivity of the Information Resources Division, which is responsible for compiling, coordinating, and producing a variety of reference materials, publications, and information aids that support all VIARC programs. Some 49 publications as well as monthly pan-Institution Calendars of Events and Exhibitions Directories were produced, and a new technique was employed to assure greater durability and provide a longer life for outdoor orientation pylons. Information Center interactive components and the electronic maps were updated regularly to reflect the most current information.

-- Project Assistance Behind-the-Scenes - Programs, departments, and divisions across the Institution were assisted by VIARC's Behind-the-Scenes Volunteer Placement Program,

which continued registering, recruiting, and placing volunteers for a myriad of independent projects. The annual Institution-wide survey of volunteer activities documented that 5,159 volunteers contributed 529,782 hours of service during 1990.

V. Office of Public Affairs - With base funding of 14 workyears and \$873,000, OPA coordinates and oversees public affairs, publicity, promotion, advertising, and other information programs of the Smithsonian in conjunction with bureaus and offices. The Office develops programs to advance the Institution's objectives in public information and acquaints the public with research, exhibitions, public programs, and other activities of the Smithsonian by working with newspapers, magazines, television, and radio to gain media exposure. A major goal of OPA is to encourage culturally diverse audiences to take advantage of the many resources of the Smithsonian. The Office of Public Affairs produces general information brochures and booklets, the employee newspaper, a syndicated monthly feature story service for newspapers, a quarterly research bulletin, a bimonthly newsletter for Native Americans, and other materials. A portable exhibit featuring minority visitors is displayed at appropriate media conferences around the country, and full-page Smithsonian advertisements are featured in their conference booklets.

-- Smithsonian News Service - OPA distributes the Smithsonian News Service, a free monthly package of four feature-style articles on subjects in art, history, science, technology, and contemporary life. The service goes to 1,000 daily and weekly newspapers. One story each month is translated into Spanish and mailed with the English edition to 100 Hispanic and bilingual newspapers in the United States and Puerto Rico. In addition, selected stories are distributed internationally by the New York Times Syndication Sales, Inc.

-- African-American Audiences - An ad hoc African-American Media Advisory Committee, formed to discuss new ways to reach African-American audiences, completed its work in FY 1991. Its suggestions included themes for public service announcements, revisions in the format of the Smithsonian's monthly events calendar, expansion of radio advertising, and programs for students in African-American communities. The success of the Media Advisory Committee has inspired the use of similar resources for other audiences.

OPA has completed two brochures for African Americans: "Explore Your Heritage at the Smithsonian," aimed at school-age children and general visitors to the Smithsonian, and "Resources at the Smithsonian for African Americans," a more detailed booklet for a scholarly audience. Radio advertising campaigns continue for Black History Month and for the Anacostia Museum.

-- Latino Audiences - The Office began publicity for the Columbus Quincentenary program with Hispanic magazines plus a well-publicized annual Hispanic Heritage Month program. OPA coordinated publicity for the major pan-Institutional Columbus Quincentenary "Symposium of the Americas." It also produced and aired radio advertisements in three major Hispanic markets on the East Coast for the Quincentenary program. The ad hoc Latino Advisory Committee was formed in 1991 to discuss ways to reach Latino audiences.

-- Publicity on Research Efforts - Research Reports, a newsletter about the ongoing research of the Institution, appears quarterly. It includes such special features as the column "Research Vistas," a book review and author profile, and information of special interest to the more than 70,000 Contributing Members of the Smithsonian National Associate Program, who also receive this publication.

OPA also focuses on publicizing environmental research and activities by coordinating publicity for the Smithsonian Tropical Research Institute, the Smithsonian Environmental Research Center, and other special programs. A 30-second public service announcement, featuring actor Robert Redford describing the beauty and diversity of Earth and the Smithsonian's efforts to preserve the environment, continues in distribution.

-- General Publicity - The Office coordinates pan-Institutional publicity campaigns and undertakes publicity for those Smithsonian units that do not have a public affairs specialist. Among the special campaigns undertaken in FY 1991 were promotion of a new autobiography by Benjamin Davis, first black general in the U.S. Air Force, published by Smithsonian Institution Press, and production of a public service announcement for disabled visitors.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, the Office of the Assistant Secretary for Public Service requests an increase of 4 workyears and \$328,000 for administrative support for its immediate office (2 workyears and \$120,000); for administrative support for the Smithsonian Office of Wider Audience Development (1 workyear and \$41,000); for the Smithsonian Information Center's interactive video and electronic components maintenance (\$70,000), Smithsonian Information Center maintenance and repair (\$20,000), and printing and reproduction (\$15,000) for the Visitor Information and Associates' Reception Center; and an Asian-American outreach specialist and support costs for the Office of Public Affairs (1 workyear and \$62,000).

I. Office of the Assistant Secretary for Public Service:

Administrative Support (2 workyears and \$120,000) - The Office is responsible for encouraging program initiatives that advance pan-Institutional objectives in education, cultural diversity, and public service. The scope and responsibilities for these program activities have increased significantly within the Institution and with outside organizations.

The requested increase for two positions, a program assistant and staff assistant, will provide better administrative support for the immediate office and public service program activities. The program specialist (1 workyear and \$51,000) will serve as manager of the educational outreach program. Responsibilities will include identifying scholars to serve on a panel to review proposals for outreach projects and schedule periodic meetings of the Educational Outreach Review Panel; provide programmatic oversight for selective public service offices; coordinate plans for special events, commemorations, and public programs; serve as coordinator for pan-Institutional cultural diversity programs; schedule periodic meetings of the Cultural Education Committee and regular monthly meetings of the Smithsonian Office of Wider Audience Development; and attend designated professional meetings, conferences, and workshops within the Institution and with outside organizations.

The staff assistant (1 workyear and \$42,000) will serve as a confidential assistant to and provide administrative support for the Assistant Secretary and Deputy Assistant Secretary for Public Service. The incumbent will supervise the preparation of travel authorizations and vouchers; prepare responses to correspondence, general inquiries, and requests for data from the general public and top-level management; and oversee the work of the clerical staff by providing guidance on appointment scheduling and correspondence formats. The staff assistant will also serve as liaison to facilitate pan-Institutional support programs and projects of the Smithsonian African-American Association; and schedule conference and special events with dignitaries for the Assistant Secretary and Deputy

Assistant Secretary. The remaining funds will provide support for travel (\$4,000), training (\$2,000), equipment (\$10,000), supplies and materials (\$4,000), contractual services (\$5,000), printing and reproduction (\$1,000), and rent and communications (\$1,000).

The requested administrative support positions will improve the processing of programmatic documents and administrative matters by reducing the volume of documents for review and/or approval by the Assistant Secretary and Deputy Assistant Secretary for Public Service.

II. Smithsonian Office of Wider Audience Development:

Administrative Support (1 workyear and \$41,000) - One of the principal responsibilities of the Smithsonian Office of Wider Audience Development is coordination of five annual pan-Institutional observances of ethnic and women's heritage. The objectives include staff education, wider audience development, promotion of relations with culturally diverse organizations and institutions, and the encouragement of new initiatives in the Smithsonian's work in documenting the history and cultural expressions of ethnic minorities and women. The requested increase for a program assistant will provide needed administrative support for the director.

Because program activities are growing in scope and complexity, SOWAD needs a new program assistant position (1 workyear and \$30,000) to staff the volunteer planning committees; and to provide needed assistance for the director in coordinating and planning the pan-Institutional observances of ethnic and women's heritage programs at the Smithsonian. In addition, the requested funds will provide for travel (\$2,000), training (\$1,000), supplies and materials (\$2,000), printing and reproduction (\$3,000), rent and communications (\$1,000), and equipment (\$2,000).

III. Visitor Information and Associates' Reception Center:

Smithsonian Information Center Interactive Video and Electronic Components Maintenance (\$70,000) - SIC serves as a central information and orientation point for visitors to the Institution. It is the fourth most visited Smithsonian facility, serving more than 2.5 million visitors to date. Revision and update of information and computer programs and systems, upgrade of theater projection equipment, and replacement of unsatisfactory and outmoded hardware components must be pursued to maintain the integrity of the information systems and accommodate expansion of the Institution's activities, including the National Postal History and Philatelic Museum, the New York City American Indian Museum, and reopening of the Freer Gallery of Art in 1992. Funding will guarantee continued operation of the interactive video and electronic components of the Smithsonian Information Center (SIC).

Life expectancy of computer elements dictates periodic replacement. Funds will purchase new or replacement equipment (\$70,000) as needed, resulting in the continued availability of high-quality, dependable information systems for the public and in savings to the Institution in maintenance and repair costs. Specifically, support for this request affects the video presentation and projection systems for the two theaters, 13 touch-screen interactive stations (monitors, personal computers, and videodisc players), two electronic wall maps, and two computers used by volunteers staffing the Center to access information reference tools.

This request is vital to maintain the multiple electronic information resources of the Smithsonian Information Center. As demonstrated to date, the public is best served by a range of information components that can satisfy individual information needs and interests in the time frame each person has to spend. Electronic information has proven to be easily updated and very accessible to the Institution's diverse audiences.

Smithsonian Information Center Maintenance and Repair (\$20,000) - The SIC opened in November 1989 and serves as a central information and orientation point for visitors to the Institution. To ensure uninterrupted service to the general public and a positive environment, all computer and audiovisual equipment must be kept in good working order, and furnishings must be repaired or refurbished as necessary. This request represents funding for maintenance and repair of all items necessary for continued operation of the Smithsonian Information Center.

The requested \$20,000 will be used for routine repairs and for annual maintenance service contracts for theater seating and screens, sofas, carpets, draperies, computers, touch-screen shields, laser disc players, audiovisual equipment, exhibit cases, information desks, brochure carts, baby-changing stations, signs, visitor lockers, and similar facilities.

The Smithsonian Information Center serves the public by providing accurate, easily accessible information and orientation in an inviting and comfortable setting. These funds will maintain a safe, functional, and attractive environment.

Printing and Reproduction (\$15,000) - The Visitor Information and Associates' Reception Center is the central support unit responsible for Institution-wide information and assistance programs for the public, Associate members, Smithsonian staff, and volunteers. Printing and reproduction funds are required to support VIARC programs that have been designed to meet the information and orientation needs of the Smithsonian's many audiences.

A variety of materials are designed, printed, or duplicated to respond to requests for information and previsit education. These printed materials are given to visitors in response to requests for information received via the Smithsonian Information Center, information desks in 11 Smithsonian museums, public inquiry mail, telephone inquiries, and other VIARC programs. For example, in FY 1990, VIARC staff and volunteers responded to some 47,000 public mail inquiries and 337,000 telephone inquiries on subjects as diverse as the Institution itself.

The requested \$15,000 will allow VIARC to develop and print additional and/or new materials deemed necessary by visitor requests and to replenish the supply of general information materials, including bibliographies, fact sheets, forms, flyers, handbooks, leaflets, heritage celebration samplers, and certificates of appreciation. Funds will also provide for the semiannual updating and refurbishing of ten outdoor orientation pylons.

As the central information and orientation point for the Smithsonian Institution, VIARC must receive the support required to provide printed materials and graphic information to meet the needs of the Institution's public.

V. Office of Public Affairs:

Asian-American Outreach Specialist and Support Costs (1 workyear and \$62,000) - As a major national agency for research and education, the Smithsonian makes efforts to increase the use of Smithsonian resources by all Americans and to help bring culturally diverse populations into active participation in the Nation's cultural life.

According to the 1990 census, in the last ten years the ethnic populations of the United States have increased dramatically. One in every five Americans now has African, Asian, Latino or American Indian ancestry. Of these, 7.3 million are Asian Americans, an increase of more than 100 percent since the 1980 census. This makes Asian Americans the fastest growing minority in the United States. Thousands of Asian Americans live in the Washington, D.C., area. In Maryland and Virginia, several Asian subgroups doubled or quadrupled in population over the last ten years.

The Institution has been criticized in the media, by its own Cultural Education Committee, and by others for its slow pace in reaching ethnically diverse audiences. The Office of Public Affairs is active in African, Latino, and Native-American outreach efforts. It has found that the addition of specialists for these populations has resulted in a marked increase in Smithsonian program publicity in the media aimed at these groups.

The public affairs specialist for Asian-American outreach (1 workyear and \$62,000) will provide needed assistance for the Office of Public Affairs in coordinating and planning pan-Institutional media coverage to communicate Asian-related issues to the Asian-American community through the resources of the media. The specialist will develop news releases and features concerning the mission, programs, and accomplishments of the Smithsonian Institution that are of special interest to the diverse Asian-American community. The specialist will be the Institution's liaison with Asian-American media representatives. In addition, support costs are needed for travel (\$5,000), training (\$2,000), and equipment (\$4,000).

By adding a specialist in Asian-American communications, the Office can more effectively carry out the Smithsonian's mandate to reach a highly diverse population.

NONAPPROPRIATED SOURCES OF FUNDING:

I. Office of the Assistant Secretary for Public Service:

Unrestricted General and Special Purpose Funds - An annual allotment provides for the salary, benefits, and support costs of three staff members assigned to the immediate office. A Special Purpose fund provides for the Educational Outreach Fund, which fosters research on improved, expanded, and innovative methods of outreach activity. While the projected expenditures appear under this Office, the recipient organizations actually receive grants to support specific projects.

II. Smithsonian Office of Wider Audience Development:

Unrestricted General and Special Purpose Funds - An annual allotment provides salary and benefits for a secretary in the Smithsonian Office of Wider Audience Development and support costs for wider audience initiatives, including the Cultural Education Committee, which fosters the development of pan-Institutional outreach efforts designed to attract diverse cultural audiences.

III. Office of Telecommunications:

Unrestricted General and Special Purpose Funds - An annual operating allotment provides support for ten full-time staff members and costs associated with the production of educational and informational materials for the electronic media. The sale of film, video, and audio programs provides additional funds.

Restricted Funds - Individual gifts and grants from private foundations and corporations provide these funds, used by OTC for specific programs. In FY 1991, funds from the Phileology Trust supported completion of the one-hour environmental film, Our Biosphere: The Earth in Our Hands. A consortium of Japanese companies, including the Kajima Corporation, Hitachi Limited, and the American Family Insurance Company, provided grants for a major film on the history and cultural significance of Japanese gardens, to be completed in FY 1992. Funds from public television station WQED in Pittsburgh supported development of a special program titled "Earth Game," in which international teams explore solutions to global environmental problems. Finally, Chase Manhattan Bank provided funds toward production of the "Cole Porter 100th Anniversary Celebration" for radio.

Government Grants and Contracts - In FY 1991, the Environment Ministries of the Netherlands and Norway provided grants toward the development of "Earth Game."

IV. Visitor Information and Associates' Reception Center:

Unrestricted General and Special Purpose Funds - An annual operating allotment supports VIARC's work as the public service office responsible for Institution-wide information and assistance activities.

V. Office of Public Affairs:

Unrestricted General and Special Purpose Funds - Allotments provide for public outreach activities such as wider audience advertising and other initiatives in the African-American, Latino, Native-American, Asian-American media; radio advertisements; "Welcome" brochures for museum visitors; monthly newspaper advertisements of general Smithsonian events; and the Smithsonian employee newsletter.

SMITHSONIAN INSTITUTION PRESS

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	29	1,397	41	17,651	-	-	-	8	-	-
FY 1992 Estimate	29	1,482	41	19,117	-	-	-	-	-	-
FY 1993 Estimate	29	1,485	41	20,611	-	-	-	-	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - A member of the Association of American University Presses since 1966, the Smithsonian Institution Press (SIP) edits, designs, produces, and distributes books, sound recordings, and other printed materials prepared by Smithsonian scientists, historians, and curators as well as scholars from educational institutions around the world. Such materials also include research monographs, technical and scientific series, exhibition catalogues for Smithsonian museums, educational pamphlets, and informational leaflets. In addition, SIP generates unrestricted Trust-fund income through the publication and sale of books and recordings on subjects of general interest that relate to the Smithsonian collections and research, which are suitable for direct-mail marketing to Smithsonian Associates and the retail trade. Although still reflected within the Public Service section for presentation purposes, SIP is now organizationally placed under the Assistant Secretary for External Affairs.

For FY 1993, the Smithsonian Institution Press requests an increase of \$18,000 to procure freelance editorial services. This increase is partially offset by a decrease of \$15,000 for the return of Columbus Quincentenary funds to publish Columbian Consequences.

PROGRAM - There are many ways one can look at the Smithsonian Institution Press:

- As a bureau of the Smithsonian Institution utilizing both federally appropriated monies and Trust funds for the purpose of publishing books, sound recordings, and videos. Federal funds support publications and recordings of scientific, technical, or research materials that cannot be sold by the Press. Trust funds are applied to publications of general interest that can be sold and are self-supporting. Sales provide a contribution to the unrestricted general Trust fund of the Institution.
- As a programmatic bureau that actively solicits manuscripts both from within and outside of the Smithsonian in scholarly disciplines reflecting the research and curatorial interests of the Institution. This pursuit is similar to that of other university presses of whose association SIP is a member.

- As a service bureau that provides the array of services one expects from a professional publishing program, ranging from scholarly monographs and research papers to nonfiction intended for a broader readership.
- As a university press that publishes, among other things, works of scholarship of such singular specificity that a subvention is often required for the work to reach its small but equally singular (and important) audience.
- As a publisher of trade books that are of a scholarly nature but with a sufficiently wide appeal to elicit revenues which pay part or even all their publication costs.
- As a commercially sound publisher producing books and recordings that reflect solid scholarship in a manner attractive to a wide audience through direct mail. These publications combine the quality one expects in products that bear the Smithsonian name with a broad enough market appeal to return a financial surplus that supports less remunerative but completely worthy books on Smithsonian research and scholarship.

The Smithsonian Institution Press is all of these and more. And while it is possible to separate out some of its activities into "federally funded" and "Trust funded" entities, the two are intertwined in a symbiosis that produces more than the sum of the parts. So, even though for budgetary purposes Federal is separated from Trust, they cannot be separated in fact.

University Press Division - The Smithsonian Institution Press received highly favorable reviews in major newspapers and journals for several volumes published in FY 1991, particularly Wild Ice: Antarctic Journeys by Ron Naveen, Colin Monteath, Tui De Roy, and Mark Jones; Deliberate Speed: The Origins of a Cultural Style in the American 1950s by W.T. Lhamon, Jr.; Carry Me Home: Louisiana Sugar Country in Photographs by Debbie Fleming Caffrey; and Benjamin O. Davis, Jr., American: An Autobiography. SIP contracted the Davis autobiography to Lorimar Productions for a television movie to be shown nationally in early 1992. The Press continues to strengthen and expand the subject diversity of its various lists: natural sciences, art and art history, aviation history, cultural and technological history, anthropology, archeology, history, and music and musicology. The Press has undertaken list building in several additional areas, including ethnic, regional, and minority studies and studies of popular and material culture.

In art and art history, the Press continues to produce its own titles along with titles in collaboration with museums and other art institutions. Notable among Press books in this area were Made With Passion: The Hemphill Folk Art Collection in the National Museum of American Art by Lynda Hartigan; The West as America: Reinterpreting Images of the Frontier edited by William H. Truettner; and the inaugural four volumes in the new "Photographers at Work" series, edited by Constance Sullivan.

The publication of several important titles in FY 1991 demonstrated strong development activity in the Press's science list. Among them, aside from Wild Ice, mentioned above, were Hawks, Eagles, and Falcons of North America by Paul Johnsgard; Sarapiqui Chronicle: A Naturalist in Costa Rica by Allen Young; Heliconia: An Identification Guide by Fred Berry and John Kress (this project was the recipient of a Smithsonian Regent's Publication Fellowship); Nature Reserves: Island Theory and Conservation Practice by Craig Shafer; and Human Paleopathology edited by Donald Ortner and Arthur Aufderheide. This year also

saw the publication of the first volume in the Smithsonian Series in Comparative Evolutionary Biology, The Development and Evolution of Butterfly Wing Patterns by H. Frederik Nijhout.

Federally funded books published during FY 1991 include The Canela (Eastern Timbira) I: An Ethnographic Introduction by William H. Crocker (Smithsonian Contributions to Anthropology, no. 33); Climate and Moisture Variability in a Tropical Forest: Long-term Records from Barro Colorado Island, Panama by Donald M. Windsor (Smithsonian Contributions to the Earth Sciences, no. 29); Studies on Fossil and Extant Vertebrates from San Salvador (Watling's) Island, Bahamas by Storrs L. Olson, Gregory K. Pregill, and William B. Hilgartner (Smithsonian Contributions to Zoology, no. 508); Tule Technology: Northern Paiute Uses of Marsh Resources in Western Nevada by Catherine S. Fowler (Smithsonian Folklife Studies, no. 6); Russian Copper Icons and Crosses from the Kunz Collection: Castings of Faith by Richard Eighme Ahlborn and Vera Beaver-Bricken Espinola, editors (Smithsonian Studies in History and Technology, no. 51).

The Smithsonian History of Aviation Series experienced continued growth with the publication of several classic reprints. Other aviation titles in this series included Howard Hughes and TWA by Robert Rummel and Lightning over Bougainville: The Yamamoto Mission Reconsidered by R. Cargill Hall. In addition to these series volumes, the Press published Farther and Faster: Aviation's Adventuring Years, 1909-1939 by Terry Gwynn-Jones; A Spacefaring Nation: Perspectives on American Space History and Policy edited by Martin Collins and Sylvia Fries; and the 4-volume series United States Women in Aviation.

The social science list showed considerable development as well. New in the Smithsonian Series in Ethnographic Inquiry were Knowledge and Power in a South Pacific Society by Lamon Lindstrom; and Localizing Strategies: Regional Traditions in Ethnographic Writing edited by Richard Fardon. The Smithsonian Series in Archaeological Inquiry issued J. Daniel Rogers's Objects of Change: The Archeology and History of Arikara Contact with Europeans. In connection with the Quincentenary, the Press released Columbian Consequences: The Spanish Borderlands in Pan-American Perspective edited by David Hurst Thomas. This and the catalogue for the Smithsonian exhibition Seeds of Change edited by Herman Viola are the Press' two essential contributions to the Quincentenary observances of 1991-1992. The Press also began to address issues of global change with Breakthroughs on Hunger by Richard Harley, Sharing Innovation: Global Perspectives on Food, Agriculture, and Rural Development edited by Neil Kotler (a publication of the Office of Interdisciplinary Studies), and through the establishment of a co-publishing relationship with the International African Institute.

Finally, the Press began to develop its Museum Studies list more fully with the publication of Exhibiting Cultures: The Poetics and Politics of Museum Display edited by Ivan Karp and Steven Lavine; History Curatorship by Gaynor Kavanagh; and Archaeological Curatorship by Susan Pearce.

Smithsonian Books - Smithsonian Books publishes books for the Smithsonian Associates on subjects relating to Smithsonian collections and research interests. Marketed primarily by direct mail to the Associates and other lists, these books are also available to the general public through licensing arrangements with several trade publishers, including the sales force of the University Press Division. Some of the current titles are the 12-volume Smithsonian Guides to Historic America; Editor's Choice: An Anthology of the First Two Decades of "Smithsonian Magazine"; Lords of the Air: The Smithsonian Book of Birds; Images of America: A Panorama of History in Photographs; In the Age of Mankind: The Smithsonian

Book of Human Evolution; Exploring the West; The Smithsonian Book of Flight; The Smithsonian Book of North American Indians; and Treasures of the Smithsonian. In August 1990, Smithsonian Books published After Columbus: The Smithsonian Chronicle of the North American Indians. In addition, Smithsonian Books has successfully marketed a 60-minute video, The Magnificent Whales. The goal of the program is to continue publishing well-written, carefully researched, commercially successful, and critically acclaimed books and related videos. For FY 1991, Smithsonian Books is developing a publication on the history of the book.

Smithsonian Collection of Recordings - The Recordings Division publishes both popular recordings suitable for direct-mail marketing to Smithsonian Associates and recordings of scholarly interest. At the beginning of FY 1991, the Division released Classic Country Music, a revision of the out-of-print collection of the same name from 1981. It presents 100 songs from the 1920s to the 1980s, documenting the history of country music. Cultural historian Bill Malone wrote the companion booklet to the songs. The Division also released a Christmas album this year, featuring the baroque instrumental sounds of the Smithsonian Chamber Players and baritone Max van Egmond. The title of the collection of traditional carols is Sweet Was the Song. Planned for FY 1991 release are three compact discs showcasing jazz pianist Jelly Roll Morton and a large collection of recordings titled Folk Song America: A 20th Century Revival.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, the Smithsonian Institution Press requests an increase of \$18,000 to procure freelance editorial services. This increase is partially offset by a decrease of \$15,000 for the return of Columbus Quincentenary funds to publish Columbian Consequences.

Freelance Editorial Services (\$18,000) - The Smithsonian Institution Press seeks funding to employ freelance copy editors to augment existing staff in the Contributions and Studies Program. Since the conversion of operations to a desktop publishing system in 1987, significant cost savings for typesetting and page makeup have been achieved. Staff editors perform these services as part of the editing process, producing camera-ready copy for publications. The additional duties, coupled with increasing manuscript submissions, have fully absorbed the time of the staff, making production schedules dependent on freelance editorial services. Extended illness or resignation of staff will jeopardize the current production capacity and result in production backlogs.

With the increase requested, SIP will procure the services of freelance copy editors to assist current staff in maintaining the current level of editorial production schedules for manuscript submissions. Services will be obtained as necessitated by the volume of manuscript submissions. The cost savings derived by handling production in-house will continue. Extended delays in the publication of research findings will be averted, maintaining the effectiveness of the gains from desktop publishing.

The ability to procure supplemental editorial services will allow the SIP to maintain current staff levels. Current production levels will be maintained, with cost savings from in-house editorial services passed on to researchers.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - In addition to the University Press, the Smithsonian Institution Press has two divisions financed entirely with nonappropriated Trust funds: Smithsonian Books, the direct-mail division that publishes popular books

based on Smithsonian collections and research; and the Smithsonian Collection of Recordings, the division that produces recordings from the collections and performing arts. The sale of Trust-funded books and recordings and royalties provide the resources that support development, marketing, warehousing, distribution and production expenditures as well as supply additional resources to the general Trust funds of the Smithsonian Institution.

OFFICE OF FOLKLIFE PROGRAMS

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	10	1,244	15	817	-	50	-	500	-	850
FY 1992 Estimate	10	977	15	833	1	275	-	150	-	700
FY 1993 Estimate	16	1,849	15	833	1	250	-	150	-	700

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Office of Folklife Programs (OFP) engages in cultural conservation activities--scholarly research, professional advocacy, and public programs--that promote continuity, integrity, and equity for traditional ethnic, tribal, regional, minority, and working-class cultures both in the United States and abroad. The Office documents and interprets traditional cultural forms in collaboration with community members; disseminates information on traditional cultural forms to the general public; provides access, visibility, and representation for diverse cultures in a national museum setting; assists traditional communities as they chart their own cultural futures; pursues cultural conservation concerns nationally and internationally; and contributes to the theories and methods of cultural conservation and representation. The Office accomplishes these goals through research projects, the Festival of American Folklife, programs in commemoration of the Columbus Quincentenary, symposia, community inreach and educational outreach activities, museum and traveling exhibitions, fellowship and training programs, Smithsonian/Folkways Recordings, and the Smithsonian Folklife Studies series of documentary publications, recordings, and films. Cultural documentation associated with these activities constitutes the Folklife and Folkways Archives and Collection.

For FY 1993, OFP requests an increase of 6 workyears and \$872,000 for cultural conservation research (3 workyears and \$307,000); a Folkways Recordings coordinator (1 workyear and \$55,000); archival preservation (\$100,000); infrastructural support for the Festival of American Folklife (\$140,000); education programs (1 workyear and \$65,000); production support for Smithsonian Folklife Studies films and monographs (\$100,000); and a development officer (1 workyear and \$105,000).

PROGRAM - The Office of Folklife Programs researches American and worldwide grass-roots cultural traditions and publishes and presents research to scholarly and public audiences through the Festival of American Folklife, Smithsonian Folklife Studies, Smithsonian/Folkways Recordings, and other exhibits and programs. OFP conserves traditions through documentary and archival collections of music, verbal arts, and material culture and the encouragement of exemplary tradition bearers. OFP cooperates with other Federal

and State agencies to advance the Nation's interest in cultural continuity, conservation, and equity.

Research - Teams of American and Soviet scholars are conducting fieldwork in Eskimo, Russian, Ukrainian, Armenian, and Bukharan Jewish communities in both the United States and the Soviet Union to analyze continuity and changing traditional culture in the two societies. Other major research projects examine cultural creolization in the New World, the folklife of New Mexico, the culture of recent African immigrants, the occupational culture of family farmers and of White House workers, and Australian, Hawaiian, and Pacific Island folklife. Staff scholars continue their individual work on African-American and Hispanic culture, Native-American music, South Asian folk knowledge, Brazilian Indian culture, African narrative, and the folklife of Asian immigrants to the United States. Visiting fellows have studied Caribbean music, Native-American narrative, African-American sociolinguistics, and Anglo-American ballads.

Festival of American Folklife - The Festival of American Folklife, held annually on the National Mall since 1967, educates a broad public to human cultural diversity and encourages tradition bearers by giving national recognition to their artistry. The Festival provides a national and international model for the research-based presentation of cultural traditions. The 1992 Festival will feature the occupational folklore of the White House and, for the Columbus Quincentenary, programs on the folklife of New Mexico, the culture of Maroons, and the traditional and syncretized musical culture of Native Americans.

Publications - The Smithsonian Folklife Studies series recently released monographs on Tule Technology and an ethnographic film on Korean Onggi Pottery. A new volume on Working Americans and a film, From Muharram to Hosay: American Transformations of Islam, are in process. Publications celebrating the 25th annual Festival of American Folklife include a case study of the Festival's impact, Cultural Conservation through Representation, a Smithsonian Folklife Cookbook, a manual for festival production, and a Festival history by Ralph Rinzler, the Smithsonian's Assistant Secretary for Public Service Emeritus and the Festival founder. The Smithsonian Institution Press will publish three books resulting from OFP-sponsored Quincentenary symposia--Seeds of the Past: Continuities in Native-American Agriculture, Seeds of Commerce: Economic and Cultural Consequences of Caribbean Plantation Society, and Seeds of Industry: Transformations of Local Culture.

Smithsonian/Folkways Recordings - Folkways continues to produce new research-based recordings with liner notes, release older material in cooperation with Rounder Records, and operate an archival cassette fulfillment operation for noncommercial recordings. Major projects include a 20-volume set of recordings on Indonesia sponsored by the Ford Foundation and done cooperatively with the Indonesian Ethnomusicological Society, a series on "Music of the Americas," a world music video encyclopedia with JVC (Victor Company of Japan, Ltd.), and recordings of the "Musics of Struggle" with Columbia Records. Recent releases on Doc Watson, Joe Hill, the music of the Georgia Sea Islands, the music of Bukharan Jews in Uzbekistan and Queens, New York, and the blues of Sonny Terry and Brownie McGhee have earned critical acclaim and indicate the wide scope of current projects.

Exhibitions - OFP mounted an exhibit, "Andean Textiles," in the Ripley Center in collaboration with the Inter-American Foundation. Other exhibits on "Family Folklore," "The Grand Generation," and "Stand by Me: African-American Expressive Culture in Philadelphia" continue to tour museums and community centers across the United States.

Education and Public Programs - OFP is producing educational materials for classroom use based on research and Festival of American Folklife programs in the U.S. Virgin Islands, Hawaii, Massachusetts, and the Washington area. OFP cooperates with the Music Educators National Conference and other organizations to develop publications, films, and recordings to teach social studies through music and the folk arts. Folkways has developed a video series, beginning with educational recordings, and collaborates with Rand McNally and Broderbund in using music to teach geography through interactive computer software.

Archives - The Folklife and Folkways Archives contains audiotapes, records, videotapes, photographic images and film, paper files, and books documenting folklife traditions from all parts of the United States and most regions of the world. Highlights of the collection include 40 years of world music documentation and field notes used in Folkways Records production, fieldwork reports for 25 years of the Festival of American Folklife, narratives of occupational folklife, family folklore, immigration stories, American musical traditions, and performance traditions of Anglo-American, African-American, Native-American, Hispanic, and various Euro-American groups. Recent additions include the Cook Collection of Caribbean music.

Public Service - OFP cooperated with the State of Hawaii to remount in Honolulu the program on Hawaiian folklife displayed at the 1989 Festival of American Folklife. The State, working with OFP, plans a continuing annual festival as well as a permanent cultural center for the study and presentation of Hawaiian and Pacific cultures. OFP worked with the U.S. Virgin Islands to remount its 1990 Festival program on St. Croix in 1991 and create a permanent installation and research center. OFP continues to work with Massachusetts, Michigan, Oklahoma, and other states on festival and folklife support, as well as with other nations including Algeria, Australia, Bolivia, China, India, Indonesia, Mexico, Pakistan, Senegal, and the Soviet Union.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, OFP requests an increase of 6 workyears and \$872,000 for cultural conservation research (3 workyears and \$307,000); a Folkways Recordings coordinator (1 workyear and \$55,000); archival preservation (\$100,000); infrastructural support for the Festival of American Folklife (\$140,000); education programs (1 workyear and \$65,000); production support for Smithsonian Folklife Studies films and monographs (\$100,000); and a development officer (1 workyear and \$105,000).

Cultural Conservation Research (3 workyears and \$307,000) - The American public and policy makers have expressed increased interest in issues of cultural diversity in American life. How multi-cultural societies function; how culture is conserved, changed, and adapted in contemporary American society; and how grass-roots culture is related to economic development, environmental preservation, mass media, and national and global forms of culture are little understood. OFP will initiate a research program to examine issues and processes of cultural diversity, assemble the research findings, and disseminate the results for public understanding and public policy debate.

OFP staff researchers will annually examine several key case studies of how culturally diverse societies function, how specific forms of culture continue and change in contemporary circumstances, and how local forms of culture influence and are affected by economic development, environmental concerns, mass media, and forms of national and global culture. In FY 1993, OFP staff will research four distinct case studies: multi-culturalism in Hawaii, the transformation of Soviet and Soviet-American grass-roots cultures, cultural survival in the Virgin Islands, and the adaptations made by recent

African immigrants to the urban United States. Each study will entail field research in the appropriate communities and publication and dissemination of results to those communities, scholars, and the general public. In future years, new case studies will be added as others are completed.

Requested funds of \$307,000 will support the salaries of three folklore research specialists (3 workyears and \$126,000) and research support costs including travel (\$15,000), supplies (\$6,000), and contract fieldworkers and initial publication support costs (\$160,000).

Through cultural conservation research and publication of research findings, the national understanding and debate on cultural diversity will be supported by sound research, thus adding a missing dimension to current national discourse. Examination of individual case studies will provide a model for more general processes and help policy makers, educators, and employers design appropriate strategies for addressing issues of cultural diversity.

Folkways Recordings Coordinator (1 workyear and \$55,000) - Folkways is the Smithsonian's premier program for scholarly and educational outreach through recorded music and language. The collection, consisting of more than 2,000 titles covering the range of American and world music, verbal art, and spoken word expressions, offers a media to reach millions of adults and schoolchildren. The dissemination of Folkways through new computer and interactive technologies on an experimental basis with the Boston Children's Museum, a JVC music video encyclopedia, Broderbund computer games, and Rand McNally interactive CDTV software has revitalized the teaching of social studies, geography, history, art, and music in trial museums, libraries, classrooms, and homes.

Folkways requires additional staff to manage its collection, develop educational recordings and notes, and pursue hi-tech experiments that will provide exciting and informative education through music. A Folkways coordinator will improve collection management and develop educational materials, particularly those involving new technologies. The Folkways coordinator will work with OFP curators, the Folkways director, and other scholars to implement educational projects. The coordinator will help organize the collection; identify consulting scholars and educators for particular projects; select recordings, notes, and images for educational products; secure necessary permissions; budget and track projects; and serve as liaison with user groups, educators, professional associations, and collaborating producers and distributors.

Requested funds of \$55,000 will support a Folkways coordinator position (1 workyear and \$35,000), computer equipment and furnishings (\$15,000), and travel support (\$5,000).

The addition of a Folkways coordinator will ensure a broader use of the national music collection using technologically innovative methods to invigorate education among a larger and more diverse population.

Archival Preservation (\$100,000) - Funds are requested to preserve the rapidly decaying sound, film, and video recordings in the Folklife and Folkways Archives. These materials, acquired through the research carried out over 25 years for the Festival of American Folklife and over 50 years for Folkways Records, broadly document forms of local grass-roots culture throughout the United States and the world. They are a unique record of cultural expression in music, narrative, performance, and ritual of American and world

peoples. The deterioration and loss of these collections would deprive current and future generations of a valuable historical resource of their past.

Resources will provide for the transfer of archival sound recordings to digital and high-quality reel-to-reel tape. Decaying video and film recordings will be transferred to laser disc. The preservation of the recordings will make collection materials available for study by future generations.

Requested funds of \$100,000 will support the procurement of contractual services, materials, and equipment to effect the transfers. To the extent possible, OFP archivists, contractors, and volunteers will provide the labor. Given the fragility of the original media, some of the transfers may require outside, specialized work.

Funds will allow OFP to preserve the original recording of "This Land Is Your Land" and thousands of other sound, video, and film recordings made during this past century that evoke and illustrate the culture of American and world peoples.

Festival of American Folklife Infrastructure (\$140,000) - The Festival of American Folklife has for 25 years been the Smithsonian's groundbreaking forum for exhibiting the living grass-roots cultures of the United States and the world. Attracting more than one million visitors annually, it is a popular, highly successful vehicle for educating a broad public audience as to the richness, depth, and diversity of human cultural expression. Increasingly, the Festival has had to pay for basic services formerly offered free of charge by the National Park Service, the Red Cross, and other Smithsonian offices. The provision for services previously provided for free has eroded the Festival's base to cover infrastructural production costs. In 1991, the Festival was reduced from ten days to eight days. Increased production costs have placed a larger burden on private fundraising to cover such costs. While states, foreign governments, foundations, and corporations have increased their support for programmatic costs, they are reluctant to support core staff and basic Festival production costs. The requested funds, the first substantial increase in Festival production funds in a decade, will allow the Festival to continue as a high-quality Smithsonian activity and to serve the public in its exemplary, historical way.

Requested funds of \$140,000 will provide for contractual services and for reimbursements to the National Park Service, the Red Cross, and Smithsonian support offices for their production-related services. OFP will pay for support services, including reseeding the Mall after the Festival, security at the Festival site, first-aid services, garbage collection, temporary bathroom facilities, and a range of electrical, plumbing, construction, and transportation services.

Funds to support infrastructure requirements are needed to continue the Festival. Without an increase in base infrastructure funds, only those nations and people who can afford to cover production costs as well as program costs will be represented at the Festival. Representation in so important a forum as the Festival cannot be sold only to those who can afford to pay.

Education Programs (1 workyear and \$65,000) - From its inception, the Office of Folklife Programs has produced educational materials on grass-roots cultures for classroom use and developed training programs for teachers and community scholars. These ad hoc efforts have relied on private funds and available staff time. With the requested funds, OFP will, in collaboration with state and local school systems, systematically develop research and documentary materials from Festival of American Folklife programs, Folkways Recordings, and other projects into educational materials for classrooms around the United

States. OFP will also hold a yearly Folklore Institute for community and lay scholars to upgrade the level of training and practice of individuals who, often without formal training or institutional ties, have documented, presented, and preserved the folklife traditions of their communities. These efforts will advance knowledge among American students of their cultural heritage and increase the proficiency of community-based scholars engaged in the practice and teaching of folklife research and presentation.

Funds will support a full-time education specialist to coordinate and develop educational and curricula materials in concert with OFP curators, researchers, and outside educators. OFP videos, films, recordings, publications, and other documents will be reworked into forms accessible to and usable by students in targeted grade levels. These projects will be done in collaboration with teachers and curriculum specialists in specific school systems to ensure maximal use. The education specialist will also direct the Folklore Institute. The Institute will be held once a year for several weeks. The director will identify possible fellows; solicit and assess applications; develop the curriculum for training; organize speakers, classes, field trips, and written materials; run the Institute; and participate in its yearly evaluation.

Requested funds of \$65,000 will support the position of an education specialist (1 workyear and \$47,000), costs of Folklore Institute fellows (\$10,000), travel (\$5,000), and support costs (\$3,000) for the initial development of educational materials.

Formalizing educational programs at OFP will allow for optimal use of resources generated by other programs, help invigorate cultural and educational efforts in the schools, and reach an important segment of knowledgeable cultural specialists working in their communities without benefit of formal training or institutional support.

Smithsonian Folklife Studies Production Support (\$100,000) - For the last decade, OFP has produced award-winning, scholarly acclaimed monographs and documentary films. The Academy and Emmy Award-winning Stone Carvers is an example. OFP films and accompanying monographs are distributed by the film center at Pennsylvania State University and used in college classrooms all around the United States. They provide a means for students and scholars to learn about the diverse cultures of the Nation and the world. Yet OFP has only about \$60,000 annually to produce films and monographs, necessitating that production be spread out over as long as five years. Requested funds will allow for more timely production of high-quality, useful, multi-media educational materials.

Funds will allow OFP to produce an annual monograph and a documentary film every two years. Given a defined production schedule, potential outside support for film production will increase, allowing, eventually, for a documentary to be produced on an annual basis.

Requested funds of \$100,000 will support the writing and printing costs of monographs and costs associated with planning, shooting, editing, and producing documentary films. Most of these latter funds are for film stock, contracted services for camera operators, studio time, and travel.

OFP has demonstrated it can produce high-quality, scholarly, and publically acclaimed film and print publications. With the requested production funds it can do so in a timely and efficient manner.

Development Officer (1 workyear and \$105,000) - The Office of Folklife Programs currently raises between \$1 and \$2 million annually from non-Federal, outside sources.

These funds generally support particular Festival of American Folklife programs, Folkways recordings, exhibitions, and public programs. This effort supports OFP's mission, enhances the effect of Federal funds, and stimulates partnerships with state, local, corporate, philanthropic, and private agencies. OFP's director and curatorial staff perform fund-raising duties as part of their jobs. Adding a development officer to the staff should increase fund-raising resources, thus better supplementing Federal funds and allowing more efficient use of current staff time for primary duties.

The development officer will research and identify potential funders for specific projects as well as more general programmatic activities. The development officer will coordinate efforts with the Smithsonian's central development office, contact approved donors, help develop proposals, make presentations, support accounting functions, maintain communications with funders, and evaluate fund-raising strategies and results.

Requested funds of \$105,000 will support the salary for a development officer (1 workyear and \$60,000), travel (\$10,000), printing (\$10,000) and support costs (\$10,000), and a one-time cost for a computer and furnishings (\$15,000).

The addition of a development officer to the OFP staff will make for more efficient use of staff time and enable Federal funds to have greater effect in supporting OFP's mission. If successful, a development effort may reduce the need for future additions of Federal funds.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Allotments, along with concessions at the Festival of American Folklife, provide funds that help support program, research, and development costs of the Festival. The Smithsonian's Educational Outreach, Special Exhibition, and Research Opportunity Funds, and the International Exchange Program help support educational projects, museum exhibits, travel to scholarly meetings, and Soviet-American research.

Restricted Funds - Grants and gifts from foundations and corporations provide funds in support of Festival programs, Folkways Recordings, and other projects. In FY 1991, the Ford Foundation continued its support of an Indonesian recording project. Smaller gifts and grants from the Music Performance Trust Funds, the Ruth Mott Fund, the MacArthur Foundation, Sealaska Heritage Foundation, Columbia Records, the Inter-American Foundation, and others indicate the range of support for OFP projects.

Government Grants - Various Federal, State, and local governments provide these funds to support performances and programs at the annual Festival of American Folklife. In FY 1991, OFP received funding from the U.S. Department of Agriculture for the Family Farm Program. New Mexico appropriated funds to support that State's program at the 1992 Festival.

ACADEMIC AND EDUCATIONAL PROGRAMS

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	17	848	9	834	-	-	-	-	-	-
FY 1992 Estimate	17	894	8	677	-	-	-	-	-	-
FY 1993 Estimate	25	1,430	8	677	-	-	-	-	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - Research and education are among the principal objectives of the Smithsonian. To attain these goals, the Institution promotes scholarly and academic ties with other learned institutions and offers resources to the general public as well as the academic community. Scholarly and academic ties develop and flourish through programs in higher education, symposia and seminars, and learning opportunities at the elementary and secondary levels. This line-item includes the Office of Interdisciplinary Studies (OIS), the Office of Elementary and Secondary Education (OESE), and the National Science Resources Center (NSRC).

For FY 1993, the Office of Elementary and Secondary Education requests an increase of 2 workyears and \$117,000 for expansion of the clearinghouse on precollege educational programs and publications (1 workyear and \$70,000) and an administrative officer (1 workyear and \$47,000). The National Science Resources Center requests an increase of 6 workyears and \$419,000 for basic administrative and clerical support (2 workyears and \$72,000); expansion of the Dissemination Center for Science Teaching Resources (3 workyears and \$265,000); and a director of program development (1 workyear and \$82,000). No increase is requested for the Office of Interdisciplinary Studies.

PROGRAM:

I. Office of Interdisciplinary Studies - With base funding of 4 workyears and \$189,000, OIS organizes and promotes inter- and cross-disciplinary symposia, colloquia, and other events for specialized and public audiences focusing on contemporary life, national and global concerns, and matters of broad intellectual interest to Smithsonian scholarly staff and the American public. One of OIS's primary aims is to explore the gaps in existing knowledge as these occur among the various academic disciplines represented at the Institution and, to a lesser but still significant extent, within other research institutions, including universities. OIS convenes Institution-wide programs to increase communication and information exchange among Smithsonian staff of all backgrounds and at all levels, as well as between Smithsonian staff and external constituencies. Many of these projects are undertaken in collaboration with universities, research and policy

institutions, governmental bodies, foundations, and corporations. In addition, OIS disseminates the findings of its scholarly programs to audiences beyond those able to attend its seminars in the form of books, videos, radio series, and curriculum materials. An OIS newsletter, Interdisciplinary Studies at the Smithsonian, is published twice a year. The newsletter disseminates research findings and conclusions that have resulted from OIS seminars and offers additional institutional perspectives on areas of inter- and cross-disciplinary investigation.

In FY 1991, OIS organized the fourth annual international colloquium examining world food and agricultural issues held at the Smithsonian in conjunction with the awarding of the World Food Prize, this past year given to John S. Neiderhauser for his research in developing a better potato that resists potato blight. Held in October 1990 and co-sponsored with the International Life Sciences Institute/Nutrition Foundation, the colloquium focused on food and nutrition security in nonindustrialized countries, with speakers from Asia, Africa, and Latin America attending. The Smithsonian Institution Press publishes an annual volume of proceedings, edited by OIS staff.

During FY 1991, OIS sponsored quarterly "Ways of Knowing" seminars and devoted several sessions to exploring the process of collaboration. The seminars address questions such as: Does collaboration actually promote new ways of looking at things and play a special role in the generation of new knowledge? What circumstances encourage or discourage collaboration? How are people motivated to collaborate? How does one set standards for success? In what ways do patterns of collaboration differ from one field, culture, and historical period to another? These questions bear on research, publication, and exhibitions at the Smithsonian and beyond.

In FY 1991 a new intramural series was created. Entitled "The Smithsonian's Research Enterprise," it brought together researchers from a variety of scientific fields (tropical biology, anthropology, astrophysics, marine biology, and archeology) with the aim of presenting different research goals and methodologies, expanding exchange among researchers and research institutions, and identifying new ways to link research with exhibitions and public programs. Seminars were convened on "Fellows, Scholars, and the Smithsonian Research Experience"; "Research Ethics: Major Issues Faced by the Smithsonian"; and "Setting Priorities in the Sciences." These sessions have resulted in a heightened awareness within the Smithsonian of its scientific activities. For the coming fiscal year, OIS is organizing a seminar entitled "Frontiers in Biology: The Emergence of the Fields of Paleoecology and Their Challenges."

OIS staff and the Close Up Foundation of Alexandria, Virginia, completed production of a second educational video documentary for use in junior and senior high schools. Citizen Stories: Democracy and Responsibility in American Life is a 30-minute film that examines the link in American democracy between the rights of citizens and their responsibilities and obligations. Five different stories of young and older Americans who have served their communities in a volunteer capacity illustrate the ways in which Americans have helped to improve the quality of life. This video is a follow-up to OIS's 1987 symposium celebrating the bicentennial of the U.S. Constitution, "Constitutional Roots, Rights, and Responsibilities."

Two volumes based on OIS programs were published in FY 1991: Sharing Innovation: Global Perspectives on Food, Agriculture, and Rural Development consists of detailed analyses by experts in their respective fields from around the world; Man and Beast Revisited, an engaging collection of essays on the evolution, social behavior, and

relationships between humans and other animals, proved extremely popular. Another book is in press, and editing of two more manuscripts will be completed in FY 1991.

The 21st century is certain to witness an accelerated merging and cross-referencing of academic disciplines, international scholarly perspectives, and methodologies both in terms of research focus and with regard to the generating of museum exhibitions, public programs, and educational materials, and OIS plays a vital role in guiding and responding to innovative Institutional intellectual directions and concerns. OIS intends that the broad framework of programs established during the past fiscal year will continue to be developed in future years for the benefit of diverse Institutional constituencies and the American public.

II. Office of Elementary and Secondary Education - With base funding of 8 workyears and \$422,000, OESE is the Smithsonian's central office for educational initiatives at the precollege level. Established in 1974, the Office develops and disseminates programming that applies resources from across the Institution to the needs of schools, both locally and nationally. OESE also serves as a clearinghouse and a focal point for precollege education at the Smithsonian, convening the annual meeting of the Advisory Council on Education and working through the Office of the Assistant Secretary for Public Service to promote collaboration and communication among the Smithsonian education departments and between those departments and outside organizations.

OESE programming falls into four categories: curriculum materials for schools, professional training for teachers, programs for young people, and partnerships with schools.

Curriculum Materials for Schools - During FY 1991, the Office launched two important publishing efforts: first, a series of multi-media curriculum kits for high school teachers and students, to be published by Jackdaw Publications; and, second, a series of kits for preschool students on "The Peoples of the Americas," to be published by Santillana Publishing Company, Inc. As part of its ongoing publishing program, OESE sent Art to Zoo, a quarterly journal for teachers, to approximately 90,000 educators (and more than 2 million students) in more than 20,000 schools and began work on a curriculum kit on political protest in American history. In addition, the Office produced a Resource Guide for Teachers that catalogues all of the Smithsonian's materials available for educational use, along with those produced by the Kennedy Center, the National Gallery of Art, and Reading Is Fundamental. In FY 1991, almost 1,500 teachers nationwide ordered the Guide, which describes more than 300 cultural, scientific, and historic resources for the classroom.

Professional Training for Teachers - For District of Columbia-area educators, the Office organized, in collaboration with the National Museum of American History, a symposium, "Word of Mouth: Teaching and Learning through Stories," which drew more than 200 participants. Area teachers were also reached through 11 summer seminars offered in collaboration with the Smithsonian museums. These courses demonstrated experiential, object-based teaching methods, using Smithsonian resources, in subject areas ranging from cross-cultural communication to teaching ecology in the classroom and African-American visual arts.

For educators across the country, OESE's Regional Workshop Program, now in its ninth year, continued to serve as a catalyst for strengthening relations between communities' museums and schools. In FY 1991, the Office held workshops in Charleston, South Carolina;

Wichita, Kansas; and Tallahassee, Florida. To ensure the Regional Workshops' long-term effect, the Office is collaborating on a new program with the National Faculty of the Arts, Sciences, and Humanities, a nonprofit organization dedicated to improving precollege education. Over an 18-month period the Faculty and the Office will return to three former Regional Workshop sites, offering a program of teacher education and materials development.

Programs for Young People - In the summer of 1991, the Office sponsored the Institution's 16th annual internship program for graduating high school seniors. Forty students from 26 states participated, taking on assignments in Smithsonian curatorial divisions and other offices. In these assignments the students learned about their own fields of interest through projects such as monitoring the Zoo's golden lion tamarins, researching the history of the U.S. space program and helping prepare upcoming public programs. In addition, the Office offered a similar eight-week internship program designed to meet the specific academic and economic needs of District of Columbia Public School students.

Partnership with Schools - The Office also developed a partnership program with the D.C. Public Schools, resulting in a collaboration that will apply resources from across the Institution to the curriculum needs of two inner-city elementary schools. This effort has brought teachers into the museums, where they work with Smithsonian educators to develop materials and teaching approaches that they will use with their students and share with their colleagues.

III. National Science Resources Center - With base funding of 5 workyears and \$283,000, NSRC is a joint effort of the Smithsonian Institution and the National Academy of Sciences to improve the teaching of science in the Nation's schools. NSRC serves as a dissemination center and to provide teachers, science educators, and scientists with current information about science teaching resources, program improvement strategies, and sources of expertise and assistance. NSRC also develops innovative science curriculum materials and sponsors outreach activities to focus attention on important issues in science education, to encourage the sharing of exemplary materials and programs, to introduce new teaching methods and technologies, and to develop the leadership needed to bring about science curriculum reform at the local level.

All NSRC programs stress the involvement and collaboration of teachers and scientists and place a special emphasis on increasing the numbers of underrepresented minorities and women engaged in the study of science. Oversight of the NSRC's programs is provided by an advisory board appointed by the Smithsonian and the National Academy of Sciences that includes eminent scientists, executives from several major U.S. corporations, and educational leaders from across the country.

Because there is a special need to increase the scientific and technological literacy of young children, NSRC has undertaken several projects to improve the teaching of science in the Nation's elementary schools. The NSRC's Dissemination Center for Science Teaching Resources currently includes a comprehensive collection and information data base of elementary science teaching resources that is used by school districts initiating projects to improve the teaching of science in elementary schools. NSRC has published a resource guide based on this data base, entitled Science for Children: Resources for Teachers. In addition to information about the materials in the elementary science resource collection, the guide includes a directory of science museums and other organizations across the country that provide science teaching resources and assistance to elementary school teachers.

"Science and Technology for Children" (STC) is a four-year NSRC elementary science curriculum development project that is developing curriculum units for grades 1-6 in the areas of physical science, life science, earth science, and technology. STC units use simple, inexpensive materials to teach science and link science to the broader elementary school curriculum of mathematics, reading, writing, art, and social studies. Teachers across the country field-test STC units to refine and validate them.

NSRC has recently embarked on a large-scale project, the National Elementary Science Leadership Initiative (NESLI), to engage educators and scientists in a concerted and sustained effort to improve the teaching of science in the Nation's elementary schools and to increase the access of all students to effective elementary science instruction. Each summer, the NESLI project sponsors leadership institutes to prepare teams of teachers, science supervisors, school system administrators, and scientists to spearhead efforts to improve elementary science education in their school districts. NESLI leadership institutes help school systems design effective in-service education programs, establish science materials support systems for teachers, and develop the community support needed to improve their science programs. Through the NESLI initiative, NSRC also provides technical assistance to school districts across the country that are working to reform their elementary science programs.

EXPLANATION OF PROGRAM INCREASE: For FY 1993, the Office of Elementary and Secondary Education requests an increase of 2 workyears and \$117,000 for expansion of the clearinghouse on precollege educational programs and publications (1 workyear and \$70,000) and for an administrative officer (1 workyear and \$47,000). The National Science Resources Center requests an increase of 6 workyears and \$419,000 for basic administrative and clerical support (2 workyears and \$72,000); expansion of the Dissemination Center for Science Teaching Resources (3 workyears and \$265,000); and a director of program development (1 workyear and \$82,000).

I. Office of Elementary and Secondary Education:

Expansion of the Clearinghouse on Precollege Education Programs and Publications (1 workyear and \$70,000) - The Office of Elementary and Secondary Education will establish a national computerized clearinghouse of information about Smithsonian programs and materials for schools. This electronic service will enable teachers to preview and order materials, request and receive program information, and discuss classroom strategies with museum educators and other classroom teachers.

Modern technology can disseminate information and materials to teachers instantaneously. By joining established electronic networks, the Office will gain this dissemination capability, extending the Smithsonian to the millions of educators and thousands of educational institutions that already subscribe to them. For example, all of the information in the 100-page Resource Guide for Teachers will be available on-line. From this catalogue educators will be able to order copies of materials just by leaving a message on a computer bulletin board. Other bulletin boards will list Smithsonian traveling exhibitions along with current and upcoming venues, allowing scheduled class visits to these exhibitions to enrich students' understanding. The Office will also place educational materials on-line--for example, bibliographies, newsletters, and classroom lessons--so that teachers can review them at home and download those relevant to their current curricula. In addition, the Office will set up message boards where it can announce course offerings for teachers, register participants, and query educators about

topics of particular need and interest. Using this network, teachers will also be able to request information as they plan class trips to Washington, D.C.

In its first year, the national electronic clearinghouse will at least double the number of teachers the Office serves. With the requested funding, the Office will hire a computer systems analyst (1 workyear and \$54,000) to set up the clearinghouse and upgrade the Office's computer workstations (\$16,000). The analyst will tailor software programs to specific Office needs and set up and maintain the various networks and bulletin boards. The analyst will also strengthen the Office's publications program and desktop publishing efforts, which supply teachers with brochures, curriculum materials, and catalogues.

The requested increase represents a modest investment that will improve services to teachers nationwide. The real beneficiaries of this investment will be the Nation's schoolchildren, whose teachers will be able to incorporate Smithsonian resources into their teaching.

Administrative Officer (1 workyear and \$47,000) - To enable its senior staff both to increase educational programming and to establish collaborations with outside organizations, OESE requires an administrative officer.

OESE has never been allocated an administrative officer, consequently, three senior staff members must now devote a significant percentage of their time to routine administrative duties. These include compiling financial records and submitting periodic reports on them, drafting and processing personnel actions and procurement orders, overseeing all OESE annual orders, and monitoring contracts. Such tasks now take about 20 percent of the director's time, 60 percent of the deputy director's, and 20 percent of the publication director's (estimated in FY 1991 personnel costs to total almost \$60,000 in senior staff time).

With this request, OESE will hire an administrative officer (1 workyear and \$47,000) to take over essential but routine administrative tasks. By performing such duties, the administrative officer will free senior staff to concentrate their efforts more productively on office programming and publications, including collaborative efforts as well as the development of new projects. Over the years evaluations have demonstrated that OESE materials and programs are enormously valuable to schools. Teachers comment that the Office provides a kind of help rarely found elsewhere, combining workable lesson plans with methods for using their own communities as classrooms. In particular, the Office intends to develop more materials on areas underrepresented in textbooks. One example is multi-cultural studies. In addition, the Office has begun joint ventures with national and regional educational organizations that require the supervision of senior staff members. These collaborations will not only demand more attention from senior staff but will also require administrative support.

The increased funding and workyear will directly support the Office's educational programming and extend it to more teachers and students across the Nation.

II. National Science Resources Center:

Basic Administrative and Clerical Support (2 workyears and \$72,000) - NSRC's mission is to improve the teaching of science in the Nation's schools. As a part of this mission, NSRC has assigned a special priority to assisting school systems that serve large minority populations. Hundreds of school districts, many serving large numbers of historically

underserved minority youth, are now requesting assistance from NSRC to help them identify innovative curriculum materials and strategies that can be used effectively to improve the teaching of science to children who are "at risk."

Basic administrative and clerical support is critically needed to enable NSRC to respond to these requests and to carry out its national outreach program to help school districts improve the teaching of science.

The funding requested for two clerical positions (2 workyears and \$61,000) will be used to provide administrative support to NSRC's deputy director and director of publications. Additional funds cover supporting costs of supplies and materials (\$2,000) and equipment (\$9,000).

The provision of this administrative support will help the NSRC professional staff move ahead with programs to improve the teaching of science in the Nation's elementary and secondary schools.

Dissemination Center for Science Teaching Resources (3 workyears and \$265,000) - There is an urgent need to expand the NSRC Dissemination Center for Science Teaching Resources to enable NSRC to distribute up-to-date information about effective science curriculum resources to teachers and science educators throughout the country. Currently, the Dissemination Center's collection is limited to resources for teaching science at the elementary and middle school levels. The expanded center will include a comprehensive collection of elementary and secondary science curriculum materials and a computer information data base that will feature annotations prepared by teachers as well as bibliographic information. The Center will disseminate information to teachers and science educators by means of published resource guides and a computer telecommunications network.

The requested funding will be used to hire a director (1 workyear and \$72,000), a science education resource specialist (1 workyear and \$60,000), and an information specialist (1 workyear and \$31,000). The director will manage the operations of the Dissemination Center, supervise staff, coordinate the development of publications, and supervise the operation of the computer information dissemination network. The science education resource specialist will coordinate the identification, review, and annotation of the instructional materials that are to be incorporated into the NSRC data base, share information about exemplary materials through the computer network, and respond to special requests for assistance that are received from teachers and school systems. The information specialist will assist with the cataloguing and entry of new materials into the computer information data base and will provide general administrative support. Additional funding for supporting costs is requested for travel (\$5,000), additional office space (\$84,000), supplies and materials (\$3,000), and equipment (\$10,000).

The Dissemination Center will help NSRC to fulfill its mission to distribute information about effective science teaching materials to teachers across the country, and will complement the efforts of the Department of Education and the National Science Foundation to archive and disseminate information about the science curriculum materials produced with their support. Many of the seminal science curriculum projects of the past developed innovative materials of exceptional quality but were unable to disseminate them. The NSRC Dissemination Center will help to remedy this problem by serving as a unique conduit for the distribution of information about past and present curriculum projects and materials.

Director of Program Development (1 workyear and \$82,000) - The NSRC Smithsonian/National Academy of Sciences partnership is creating many new opportunities for NSRC to obtain private-sector support for new initiatives from business, industry, and private foundations. A director of program development is needed to enable NSRC to respond effectively to these fund-raising opportunities and proceed with programs targeted at improving science teaching in school districts throughout the country.

NSRC has assigned a special priority to the development of programs to assist school systems that serve large minority populations. These systems need NSRC's assistance to help them adopt innovative approaches that will spark an interest in science among groups of young people who are currently underrepresented in science and technology careers.

NSRC requests funds to hire a development officer (1 workyear and \$72,000) and provide supporting costs for travel (\$4,000), supplies and materials (\$1,000), and equipment (\$5,000).

This development officer will make it possible for NSRC to expand access to its programs to many more school districts by obtaining increased funding from business, industry, and private foundations.

NONAPPROPRIATED SOURCES OF FUNDING:

I. Office of Interdisciplinary Studies:

Unrestricted General and Special Purpose Funds - An annual allotment provides funds for salaries and benefits and other related administrative costs. In addition, funds support the planning and development of institutional programs, public events, educational materials, and publications, including costs for honoraria, printed materials, editorial assistance, publications, audio and video services, and travel for outside speakers.

Restricted Funds - Funds provided are in the form of restricted endowments that specify the use of donations or bequests on behalf of sponsoring organizations such as individuals, foundations, corporations, and Federal agencies. OIS received a grant from the International Life Sciences Institute/Nutrition Foundation of Washington, D.C., for support of the October 1990 international food, agriculture, and nutrition colloquium held in cooperation with the ceremonies at the Smithsonian honoring the World Food Prize laureate.

II. Office of Elementary and Secondary Education:

Unrestricted General and Special Purpose Funds - OESE's programs for young people are supported by Institutional Trust funds. Internship programs for graduating high school seniors provide hands-on learning experiences for young people from the Washington metropolitan area and across the Nation.

Trust funds also support OESE's publications program as well as its Columbus Quincentenary early childhood curriculum development project on "The Peoples of the Americas." The major effort of the publishing program is a series of curriculum kits for teachers, to be published by Jackdaw Publications.

Restricted Funds - Corporate grants support OESE efforts for teachers. In-kind contributions from American Airlines, through the end of calendar year 1991, provide

transportation for the Regional Workshop Program. A grant from Brother International Corporation supports the development, publication, and distribution of a secondary school curriculum kit.

III. National Science Resources Center:

Unrestricted General and Special Purpose Funds - An allotment from unrestricted funds provides partial funding for the core operations of the National Science Resources Center. These resources provide support for salaries and the core support necessary to develop, with the assistance of the National Academy of Sciences, program initiatives to attract further support from the private sector.

INTERNATIONAL CENTER

INTERNATIONAL CENTER

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	13	981	11	709	-	150	-	-	-	-
FY 1992 Estimate	13	1,044	11	758	-	153	-	54	-	46
FY 1993 Estimate	26	1,761	11	758	-	153	-	45	-	38

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The International Center (IC) monitors, coordinates, and enhances Smithsonian-wide international endeavors. The Center provides support for the diverse range of Smithsonian international programs through the work of several independent divisions: the Office of International Relations (OIR), the International Gallery, the Office of Quincentenary Programs, the Office of Conference Services (OCS), the Office of Environmental Awareness (OEA), and the Smithsonian Institution/Man and the Biosphere Biological Diversity Program (SI/MAB). Through the International Center, the Smithsonian also supports international research programs such as the Council of American Overseas Research Centers (CAORC).

For FY 1993, the International Center requests an increase of 13 workyears and \$717,000 to provide for clerical support for the Office of International Relations (1 workyear and \$30,000); establishment of the Institute of the Americas (3 workyears and \$210,000); support for the Office of Conference Services (3 workyears and \$100,000); base support for the Office of Environmental Awareness (2 workyears and \$150,000); and support for the Smithsonian Institution/Man and the Biosphere Biological Diversity Program (4 workyears and \$227,000).

PROGRAM - In 1985, the Smithsonian established the International Center to coordinate the Institution's international interests and to facilitate its work abroad with a global network of collaborators and research materials that cannot be circumscribed by national boundaries. Beyond this, the International Center has sought to place the Institution's scholarly work at the service of the general public, assisting the Institution's constituents worldwide in understanding an ever-expanding body of knowledge. Located in the S. Dillon Ripley Center of the Quadrangle complex, the International Center provides facilities for exhibition and discourse on a wide array of international matters. International Center programs are generated both from within and from outside the Smithsonian, taking the form of scholarly symposia and public forums, exhibitions, lectures, performances, and workshops. An International Activities Council, composed of the Assistant Secretaries for Research, Museums, Public Service, and External Affairs,

provides oversight and policy guidance for the International Center as well as for the broad range of international programs undertaken throughout the Institution.

Office of International Relations - The Office of International Relations, which reports to the Assistant Secretary for External Affairs, provides basic liaison support and coordination for the international aspects of Smithsonian research and museum programs. This responsibility includes:

- supplying guidance and information to Smithsonian staff on foreign affairs;
- facilitating communications and logistical arrangements for foreign research and participating in meetings abroad;
- assisting in drafting and negotiating agreements relating to international cooperative programs;
- assisting foreign scholars and officials who visit the Smithsonian or participate in its programs in the United States;
- compiling and updating a data base on the broad range of Smithsonian international activities;
- obtaining passports and visas for Smithsonian travelers.

The Office also manages two grant programs: the Special Foreign Currency Program and the International Exchange Program. Both programs facilitate international cooperation abroad.

International Gallery - The International Gallery, which reports to the Assistant Secretary for Museums, presents exhibitions that deal with significant global topics from various disciplinary points of view or cultural perspectives. International Gallery exhibitions have included "Tropical Rainforests: A Disappearing Treasure," "Caribbean Festival Arts," "Moscow: Treasures and Traditions," and "Degenerate Art." In 1992, "Golden Threads" will commemorate the 500th anniversary of the expulsion of Jews from Spain by displaying the artwork and creativity of Sephardic Jews. The Institution holds both public and scholarly programs in conjunction with each exhibition in the International Gallery.

Office of Quincentenary Programs - In FY 1993, the Office of Quincentenary Programs which reports to the Assistant Secretary for Research, will conclude its development and coordination of the pan-Institutional activities related to the Columbus Quincentenary. Included among commemoration efforts are major exhibitions, conferences, symposia, publications, recordings, traveling exhibitions, education materials, and a television series.

To promote a greater public awareness of the Columbus Quincentenary, the Office published and distributed more than 25,000 copies of its newsletter, The New World, as well as 20,000 copies of brochures listing Smithsonian Quincentenary programs and related activities. Printed in English and Spanish, the brochures were distributed throughout the United States, Latin America, and Spain. In cooperation with the Mexican Embassy, the Office sponsored the Pre-Hispanic Foods of Mexico exhibition in the International Gallery foyer. To inaugurate the pan-Institutional efforts for the Quincentenary, the Office, with

the Association of Ibero-American Cultural Attaches, organized and co-sponsored a Symposium of the Americas developed to explore the nature of cultural identity in the Western Hemisphere after 500 years. Prominent intellectuals from more than 20 countries were invited to discuss broad themes related to cultural identity. These activities highlighted the significant issues that have emerged from the process begun in 1492. To continue to foster a greater understanding of the issues and challenges facing the hemisphere, an Institute of the Americas will be established on the National Mall in FY 1993.

The Institute of the Americas - In recognition of the cultural complexities of this hemisphere and in keeping with the Institution's emphasis on cultural diversity and education, the Smithsonian will establish the Institute of the Americas in FY 1993. The Institute of the Americas will be a multi-disciplinary and multi-lateral research center focusing on cultural and scientific issues of importance for the Americas. The programming developed for the Columbus Quincentenary emphasized the need to address issues of concern to constituencies previously neglected at the Smithsonian. The Quincentenary created a very important and much-used forum, from which evolved an extensive network of collaborators (both scholars and institutions) and resources throughout the United States and the Western Hemisphere. The Institute will maintain the network and will foster additional scholarly and institutional exchanges.

The Institute of the Americas will report directly to the Assistant Secretary for Research. A Council, to be formed to advise the Institute, will be comprised of prominent scholars and other individuals from the United States, Latin America, and the Caribbean. The Council will assist in establishing goals and in identifying problems and issues on which to focus and will assist in securing additional funding. Semiannual meetings will be held to coordinate objectives for the Institute with the Secretary of the Institution, the Assistant Secretary for Research, the director of the Institute, and members of the Council.

Office of Conference Services - The Office of Conference Services, which reports to the Assistant Secretary for Public Service, manages logistical arrangements for conferences and seminars initiated by scholars and staff throughout the Institution. Each year the Smithsonian sponsors approximately 50 professional meetings, ranging from small workshops to major international conferences. For many years, the responsibility for handling all the logistics of each meeting, from preconference planning through implementation and postconference wrap-up, rested exclusively with the sponsoring research or curatorial department. Faced with these additional duties, the responsible departments or bureaus often found it necessary to hire temporary coordinators. To coordinate the planning and implementation of conferences more efficiently, the Institution created a central Office of Conference Services in 1988. This Office now works with sponsoring bureaus, offering the necessary level of support for meetings on a case-by-case basis.

Office of Environmental Awareness - The Office of Environmental Awareness, established at the Smithsonian Institution in April 1990 to address growing concern about the world's environment, provides a bridge between science and policy by gathering and disseminating information about a wide range of environmental issues. OEA is administered by the International Activities Council and works with Smithsonian bureaus and outside groups to reach the general public and professional audiences nationally through exhibitions, publications, conferences, and workshops. In addition to programs it initiates, the Office responds to public inquiry letters and calls and participates in projects planned by other groups.

In FY 1992, OEA will initiate a three-year project on ocean conservation issues. The project will include a public symposium, the publication of a scholarly book, and a traveling exhibition. Each segment of the oceans project will explore a wide variety of marine-related environmental issues affecting near-shore and open oceans, including loss of biological diversity, pollution, use of natural resources, coastal development, and global change.

OEA responds to inquiries about environmental issues from individuals as well as professional and community groups. In addition to frequent mailings to other organizations and the public, OEA refers requests for information on specific issues to appropriate Smithsonian bureaus and outside groups. In FY 1991, OEA developed and distributed more than 27,000 copies of "A Better World Starts at Home." This colorful poster provides information on environmental issues, national organizations that distribute information, and tips for establishing a more environmentally responsible household.

In FY 1992, OEA will co-sponsor a series of briefings for national news media in preparation for the United Nations Conference on Environment and Development in June 1992.

Smithsonian Institution/Man and the Biosphere Biological Diversity Program - SI/MAB was established in 1986 to formulate biological diversity inventory procedures and administer training in their use. Based on studies and surveys conducted in several protected locations in the United States and Latin America, the program developed an initial methodology for conducting detailed biological diversity inventories of species-rich areas around the world.

Though useful institutional linkages have also resulted from this program, its most important objective is the training of biologists, conservationists, nature reserve managers, and related professionals from developing countries. This training provides researchers in the field of biodiversity conservation with the skills necessary to conduct their own research. In a number of cases, these trained researchers have later undertaken fieldwork in association with Smithsonian scholars. This program has organized training workshops for almost 200 participants in more than a dozen countries of Latin America and the Caribbean, as well as in the United States. The United States Agency for International Development (USAID), UNESCO's Man and the Biosphere Program, the World Heritage Fund, the World Wildlife Fund, and Conservation International have helped fund training activities over the last four years.

Council of American Overseas Research Centers - American overseas research centers are the recognized extensions of the advanced foreign research programs of major American universities and museums and thus constitute an important channel through which current and historical research about other countries invigorates American institutions. Centers located in Italy, Greece, Turkey, Cyprus, Tunisia, Morocco, Iran, Egypt, Jordan, Israel, Yemen, India, Pakistan, and Hong Kong have provided fellowship funds, access to local research resources, logistical support, liaison with host-country officials, and library and housing facilities to thousands of American academics. Their physical facilities serve as the principal point of contact for U.S. scholars and their host-country colleagues, and publications and seminar programs disseminate research results abroad and throughout the United States. While centers differ greatly from each other in size, program, and tradition, their private structure and the unbiased research produced through their sponsorship make them all respected focuses of American academia in the countries in which they operate.

CAORC facilitates and coordinates the work of its 14 member institutions. Founded in 1981, the Council serves as the forum through which member centers identify and address common concerns. It fosters collaboration among research centers to strengthen academic programs and administrative procedures, and it sponsors international research projects. The Council undertakes the establishment of new centers in countries and regions where research exchange opportunities are lacking.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, the International Center requests an increase of 13 workyears and \$717,000 to provide for clerical support for the Office of International Relations (1 workyear and \$30,000); establishment of the Institute of the Americas (3 workyears and \$210,000); support for the Office of Conference Services (3 workyears and \$100,000); base support for the Office of Environmental Awareness (2 workyears and \$150,000); and support for Smithsonian Institution/Man and the Biosphere Biological Diversity Program (4 workyears and \$227,000).

Clerical Support for the Office of International Relations (1 workyear and \$30,000)
- As OIR is the coordinating secretariat of the International Center, its clerical staff devotes a substantial portion of time to providing support to the International Center as a whole. One clerical staff member serves as secretary to OIR's director, who also functions as the International Center coordinator. Logistical arrangements for which OIR is responsible require routine clerical-level support and communications that, because the clerical staff is stretched beyond its limits, professional staff members currently must perform. Adequate clerical support for the Office will improve the Institution's ability to meet its growing international responsibilities.

For FY 1993, OIR requests 1 workyear and \$30,000 to provide additional clerical support. The Office will hire a second secretary to relieve the professional staff of increased clerical duties.

It is imperative that OIR keep pace with the growing number and complexity of requests for professional services involving international activities. A modest expansion of clerical support will greatly increase the efficiency of the Office in responding to those requests.

Establishment of the Institute of the Americas (3 workyears and \$210,000) - The Smithsonian Institution has emphasized cultural diversity and education as primary directions for future expansion efforts. Through the collaboration of events related to the Columbus Quincentenary, the Institution has developed international contacts and resources throughout Central and South America. Creation of the Institute of the Americas will coordinate and stimulate continuing cultural exchange among the people of the Western Hemisphere.

The Smithsonian will establish the Institute of the Americas under the guidance and direction of the Assistant Secretary for Research. The establishment of an Advisory Council will secure participation by prominent scholars, researchers, and citizens from the United States, Latin America, and the Caribbean.

For FY 1993, the Office of Quincentenary Programs requests 3 workyears and \$210,000 to fund a program manager to initiate planning for the Institute (1 workyear and \$51,000); an administrative officer to provide administrative, budgetary, and procedural support (1 workyear and \$60,000); and a secretary (1 workyear and \$27,000). Additional funds will

support rent (\$60,000), other services (\$7,000), travel (\$3,000), and supplies and materials (\$2,000).

In accordance with its aim of advancing cultural diversity and education initiatives, the Institute of the Americas will foster scholarly and institutional exchange on issues affecting the Americas. The further diffusion of knowledge through research and discussion will advance understanding and relationships among the nations in the Western Hemisphere.

Support for the Office of Conference Services (3 workyears and \$100,000) - OCS manages conference logistics for all Smithsonian bureaus, handling arrangements for meeting sites, conference registrations, speakers, ancillary special events, and printing. Since its creation in April 1988, OCS has managed logistics for more than 40 Smithsonian conferences, ranging in size from 30 to 1,300 attendees and often involving numerous co-sponsors.

Although curators and researchers throughout the Institution have come to rely on OCS for its logistical expertise, the Office has only one permanent staff member. All other staff--those who process registrations, recruit and train volunteers to staff the conferences, and negotiate contracts for graphic designers, printers, and caterers--are temporary employees. With ever-increasing demands on OCS, permanent, full-time positions are essential to ensure that Smithsonian staff can rely on OCS for guidance and assistance.

For FY 1993, OCS requests 3 workyears and \$100,000 to hire one conference coordinator (1 workyear and \$35,000) and two conference assistants (2 workyears and \$60,000) and to provide support costs (\$5,000). The conference coordinator will coordinate speaker travel, housing, payment, and site arrangements for conferences held outside the Smithsonian. The coordinator will also negotiate outside support services, such as foreign language interpretation and local transportation. One conference assistant will process conference registrations, coordinate the production of conference publicity and program materials, and recruit and train conference volunteers to run on-site registration and hospitality areas. The other assistant will coordinate all site arrangements for conference sessions and ancillary special events held in Smithsonian facilities.

The requested funding for OCS will provide Institutional researchers, bureaus, and offices the specialized services "in-house" for developing and running seminars and symposia that would otherwise be contracted out. Expansion of OCS will make possible cost savings and more effective use of Smithsonian staff time.

Base Support for Office of Environmental Awareness (2 workyears and \$150,000) - Effective responses to critical global environmental problems will require both an informed public and knowledgeable decision makers. To promote a greater understanding of environmental issues, technical information must often be translated for a lay audience. OEA was established with private grant funds in 1990 to provide a bridge between science and policy by serving as a platform for discussing environmental issues through symposia, publications, exhibitions, and other programs. OEA requires full-time permanent staff and program support to sustain ongoing programs and plan future endeavors.

To increase public awareness about environmental issues, OEA needs support for the following efforts:

- determining the present state of knowledge of environmental issues by convening groups of scientific and technical experts to discuss the scientific basis of environmental problems and solutions;

- organizing briefings and symposia about environmental issues for the general public, news media, and other professionals;
- serving as an information clearinghouse on environmental issues by responding to public inquiry letters and calls;
- consulting with other Smithsonian bureaus, Federal agencies, and non-Governmental groups about incorporating accurate environmental information into programs;
- planning and implementing major projects to raise public awareness on specific environmental topics nationwide through traveling exhibitions, media programs, and publications.

For FY 1993, OEA requests funding of 2 workyears and \$150,000 to establish a Federal base. This base will support a program manager and research assistant (2 workyears and \$85,000), interns and training (\$32,000), printing (\$8,000), travel for OEA staff and program advisors (\$20,000), and supplies and equipment (\$5,000).

Base support for OEA will enhance Smithsonian programming on global environmental issues and make the results of scientific research more readily available to the general public. By creating an informed public and providing a platform for discussion, the Smithsonian will contribute to solving critical environmental problems.

Support for the Smithsonian Institution Man and the Biosphere Biological Diversity Program (4 workyears and \$227,000) - SI/MAB addresses the challenge of conserving the biological and cultural diversity of many countries, especially those in the tropics, by a combination of biological diversity research conducted in an international network of protected areas and field and classroom professional training courses on conservation biology, natural resource management, and the management of wildlife and natural areas. The number of nations seeking collaboration with SI/MAB has grown from three in 1989 to ten in 1991 and is expected to increase by five over the next three years. Up to 250 participants are served annually. To accommodate the growing demand for critical research and training functions, SI/MAB will require additional staff in FY 1993.

A program manager and data analyst will work with in-country researchers and decision makers to coordinate research activities involving more than 100 international field participants yearly. The addition of these two positions will allow SI/MAB to expand and improve collections and data analysis and the compilation and publication of user's and field guides utilizing research results. This model program of research allows comparison of research data worldwide that are basic to planning the sustained use of biological resources and therefore essential to sensible economic development. Two training program education specialists will improve SI/MAB's professional training programs on biological diversity, conservation, and management by handling in-country logistics, raising necessary program funds, evaluating proposals, and managing of courses with assistance of five or six full-time regional instructors. Following these training sessions, the education specialists will maintain a communications network on biodiversity issues for the program's trainees and resource personnel.

The requested funds of 4 workyears and \$227,000 in FY 1993 will provide a program manager (1 workyear and \$51,000), a data analyst (1 workyear and \$51,000), two education specialists (2 workyears and \$102,000), and support costs for the training program (\$23,000).

The addition of these positions and support will significantly improve coordination with the global system of Man and the Biosphere Programs of UNESCO and enhance the abilities of Third World nations to plan and manage wildlife and natural areas.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Allotments provide funds to support planning and development of research and exhibition programs for the International Center. A special purpose fund provides stipend support for international scholarly exchanges aimed at strengthening the Smithsonian's institutional linkages. Proposed annual allotments will provide for the salary and benefits costs for staff to support the Institute of the Americas.

Restricted Funds - Restricted funds consist of gifts, grants, and other donations from individuals, foundations, organizations, and corporations for specific purposes, such as undertaking research abroad, supporting exchanges of researchers and collections, mounting exhibitions, staging performances, screening films, and presenting other public programs in the International Center.

ADMINISTRATION

ADMINISTRATION

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	377	38,028	218	13,004	2	1,076	-	1,042	-	-
FY 1992 Estimate	392	29,835	225	14,011	2	1,351	-	1,102	-	-
FY 1993 Estimate	455	40,786	225	14,011	2	1,055	-	1,100	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - Administration includes central management, planning, oversight, and review provided by the Offices of the Secretary, Under Secretary, the Assistant Secretary for External Affairs, the Assistant Secretary for Finance and Administration, General Counsel, and the Inspector General. The Assistant Secretary for Finance and Administration oversees a range of administrative and service offices, including Accounting and Financial Services, Equal Opportunity, Contracting and Property Management (formerly Procurement and Property Management), Financial and Management Analysis, Human Resources, Information Resource Management, Ombudsman, Planning and Budget, Printing and Photographic Services, Risk Management, Sponsored Projects, and Travel Services. In addition, Facilities Services (responsible for Architectural History and Historic Preservation, Design and Construction, Environmental Management and Safety, Plant Services, and Protection Services) is included here. Offices reporting to the Assistant Secretary for External Affairs include Government Relations (formerly Congressional Liaison), Development, and Special Events. Administrative units receive both appropriated funds and nonappropriated Trust funds for their operating expenses in approximate balance to the overall funding of the Institution. However, Trust funds currently support some offices entirely, such as Risk Management and Sponsored Projects.

For FY 1993, the requested increase for administrative units totals 63 workyears and \$10,951,000. In keeping with the President's commitment to improve the management of the Government, the increase will augment the Inspector General function (\$90,000); provide the Assistant Secretary for External Affairs program support (1 workyear and \$88,000); and permit the Assistant Secretary for Finance and Administration the additional resources (3 workyears and \$1,311,000) to meet the requirements of the Chief Financial Officers Act and provide support for its Chief Information Officer. The requested resources will allow the Office of Environmental Management and Safety to ensure full compliance with Occupational Safety and Health Administration (OSHA) and other federal agency regulations (1 workyear and \$65,000). In addition, the request will allow the Office of Human Resources to keep up with the growing Institutional demand for its services (9 workyears and \$742,000); allow the Office of Accounting and Financial Services to enhance its service to the Institution (3 workyears and \$83,000); and permit the Office of Contracting and

Property Management to keep up with the growing demand for its services (2 workyears and \$176,000). The requested resources will give the Smithsonian greater flexibility in expanding present affirmative action initiatives (20 workyears and \$600,000); enhance the management of information systems by the Office of Information Resource Management (15 workyears and \$1,884,000); expand the printing capabilities of the Office of Printing and Photographic Services (1 workyear and \$325,000); and allow the Institution to hire a disaster preparedness coordinator (1 workyear and \$100,000).

Included in the Administration request but justified in the Uncontrollable Increases section of this budget are funds to support Personnel Payroll charges from the National Finance Center (\$150,000) and funds to maintain the Walker accounting software (\$100,000). Also justified in the Uncontrollable Increases section are resources to replace the Institution's Administrative Service Center (7 workyears and \$4,000,000); funds to cover Workers' Compensation (\$387,000); and rising health insurance rates (\$1,050,000). A decrease of \$200,000 for the Office of Risk Management's Disaster Preparedness Program partially offsets the requested increase.

PROGRAM - The Office of the Secretary, in concert with the Office of the Under Secretary, oversees the management of the Smithsonian Institution.

The Office of the General Counsel (OGC) advises the Smithsonian Board of Regents, Secretary, and other officers on all legal matters arising out of the administration of the Institution; coordinates and oversees litigation and other adversarial proceedings; disposes of administrative claims; and monitors developments in the law generally for application to Smithsonian programs. OGC offers extensive advice to the Institution's administrators, totaling nearly 600 cases and issues in FY 1990. Examples include negotiations culminating in the signing of the November 6, 1990, agreement to establish the National Postal History and Philatelic Museum in the former Washington, D.C., City Post Office Building (adjacent to Union Station), as a satellite of the National Museum of American History; the complex negotiations, agreements, and court proceedings involved in the June 1990 transfer of the Heye Foundation collections to the Institution's newly established National Museum of the American Indian (NMAI) and the ongoing negotiations to establish facilities in New York City and Washington, D.C., to house NMAI collections; the international negotiations for the establishment of the Mpala Ranch Project in Kenya; oversight of the distribution to the National Museum of American Art of the bequest of the artwork of Gene Davis and other real and personal property of the artist's widow; and the examination of the Institution's coverage under certain provisions of the Federal Employees Pay Comparability Act enacted in November 1990.

The United States Congress has empowered the Smithsonian Institution's Office of Inspector General, under the Inspector General Act of 1978 as amended in 1988, to provide policy direction and to conduct, supervise, and coordinate audits and investigations; to promote economy, efficiency, and effectiveness; and to prevent and detect fraud, waste, and abuse in Institution programs and operations. The Office maintains a hot line for consumer concerns, complaints, allegations, or suggestions. During FY 1991 the Office of Inspector General issued 11 internal audit reports and 25 external (contract) audit reports as well as 30 investigative reports.

The Office of the Assistant Secretary for External Affairs coordinates the Institution's external affairs activities and advises the Secretary and senior management on development and membership policies and programs, media activities, and issues affecting

the Institution's public activities and their impact on external constituencies, both national and international.

The Office of Government Relations, Office of Development, and Office of Special Events report to the Assistant Secretary for External Affairs. The Office of Government Relations establishes and maintains the Institution's relationships with Congress; presents Smithsonian policies, programs, and plans to Congress; and develops and clears legislative proposals and supplemental materials. It also coordinates and oversees Smithsonian participation at legislative hearings; serves as liaison with Federal agencies and organizations with related interests; and provides constituent services for Congress and the Administration.

The Office of Development provides fund-raising support to Institution-wide priorities and selected bureau projects and programs. In FY 1991, the Office secured a major financial gift from the Wallace Foundation for the Jazz Masterwork Series, established and received funds for the Secretary's Special Fund for Columbus Quincentenary activities, and has secured life-endowed, annual, and memorial funds. By securing gifts, planned giving bequests, and pledges, the Office achieves its goal of assisting in the increase of restricted and unrestricted funds. In addition to fundraising, the Office records and maintains all gifts donated to the Institution, conducts the management of some volunteer organizations, and attends to the stewardship of grants.

The Office of Special Events plans, arranges, and oversees luncheons, receptions, and dinners associated with exhibition openings, seminars, lectures, and meetings. In addition, the Office prepares and distributes a monthly master calendar of special events.

The Assistant Secretary for Finance and Administration oversees financial, administrative, and facilities services. The following organizations, listed alphabetically, report to the Assistant Secretary for Finance and Administration.

The Office of Accounting and Financial Services (OAFS) protects the Smithsonian's assets by collecting, authenticating, classifying, and recording the financial transactions of the Institution. OAFS provides financial information to the various levels of Smithsonian management and to external organizations.

The Office of Architectural History and Historic Preservation (OAHP), under the Office of Facilities Services (OFS), researches the architectural history of the Smithsonian buildings and publishes scholarly articles and books. The Office oversees the Smithsonian's obligations for historic preservation.

The Office of Contracting and Property Management (OCPM) is the Smithsonian's principal acquisition office. It contracts directly for the majority of goods and the variety of sophisticated and specialized services needed to support operations and construction projects and facilities and oversees the procurement authority it delegates within the Smithsonian. The Office provides acquisition policy guidance, contract administration, and property management to all Smithsonian activities. To achieve greater cost efficiencies, OCPM also provides logistical services through a judiciously expanding program of purchasing in bulk common-use supplies.

The Office of Environmental Management and Safety (OEMS), also part of Facilities Services, monitors environmental management, fire, and safety programs, in addition to disseminating and implementing the requirements of all new fire, safety, occupational

health, and environmental laws, regulations, and standards. In FY 1991, OEMS completed comprehensive fire, safety, and environmental program evaluations at 23 Smithsonian facilities, including the National Zoological Park. In addition, OEMS updated waste minimization guidelines to reduce the amount of hazardous waste generated and resultant disposal costs, implemented a confined-space entry program, and provided ergonomic consultation services to Smithsonian staff and volunteers.

The Office of Equal Opportunity (OEO) plans, conducts, and monitors a positive action program to ensure equality in employment practices and program activities. Major efforts include affirmative action programs, program and facility access for disabled persons, employee counseling and complaint processing, upward mobility programs, special programs for women and Hispanics, and community outreach to minority and women's groups in Washington, D.C., and the Nation.

The Office of Facilities Services (OFS) is responsible for the Smithsonian's facilities management program. The Office provides leadership and oversight for physical plant operations, maintenance, repair, and improvement; protection services, including physical security, medical services and occupational health; safety, fire protection, industrial hygiene, and management of the environment; planning, design, and construction of new facilities; mail services; transportation management; and architectural history and historic preservation. In executing its mission, the Office integrates the activities of the Office of Architectural History and Historic Preservation, the Office of Design and Construction, the Office of Environmental Management and Safety, the Office of Plant Services, and the Office of Protection Services. Advocates of a strong vision of quality service to the Institution and the public, the staff analyzes trends, assesses productivity, promotes cultural diversity and employee development, and evaluates program effectiveness and service delivery. The Office strives to empower its people; sets priorities, goals, and objectives; and devises solutions to issues affecting the total facilities management program.

The Office of Financial and Management Analysis (OFMA) assists Smithsonian management in increasing the efficiency and effectiveness of the Institution through studies and reviews, dissemination of policy and procedural directives, coordination of the Internal Controls Review Program, and design and control of official Smithsonian forms.

The Office of Human Resources (OHR) plans and directs a comprehensive program of human resources management for the Smithsonian's diverse employee population. Within the framework of public policy, law, and regulation, the Office provides leadership for a range of personnel services and program activities responsive to the work force needs of the Institution. Among the numerous areas of responsibility assigned to OHR are recruitment and staffing, employee orientation, position management and classification, the merit promotion program, pay and performance systems, benefits administration, technical policy guidance, employee and labor-management relations, training and development, advisory services, employee counseling, and personnel program evaluation. Additionally, OHR oversees workers' compensation, unemployment insurance, and all automated personnel processing/record-keeping systems.

The Office of Information Resource Management (OIRM) provides leadership in information technology throughout the Institution in planning, systems development, communications, training, and support activities. OIRM recently coordinated bureau participation in the development of the Smithsonian's first information resource management plan. Supporting the Institution's research program, OIRM was instrumental in arranging

the donation of computers and software for the development of multi-media curriculum materials documenting biodiversity. Additional data bases were affixed to Smithsonian Collections Information Systems (CIS) within the National Air and Space Museum, the National Museum of American Art, and the National Museum of Natural History. OIRM expanded the functions and data bases of the Smithsonian Institution Bibliographic Information System (SIBIS), which now supports more than 3,000 on-line inquiries per day. Other significant accomplishments include expanding communications access to local and distant units by implementing a standard communications network architecture. OIRM expanded its electronic mail service, which now is accessible to more than 3,000 employees and to the international academic community.

The Ombudsman serves as a neutral party to whom employees can bring any work-related problem, concern, or complaint. In addition to the approximately 200 cases handled each year, the Ombudsman oversees the Smithsonian Emergency Assistance Fund, which provides loans to employees in emergency situations.

The Office of Planning and Budget (OPB) coordinates Institution-wide planning and produces the Five-Year Prospectus. The Office formulates the Institution's Federal and nonappropriated Trust fund budgets for approval by the Secretary and the Board of Regents. OPB prepares justifications for approved budgets for submission to the Office of Management and Budget and to Congress and subsequently interacts with each on related matters. OPB monitors established budgets to ensure that spending plans advance planning goals and comply with pertinent limitations. During FY 1991, OPB activities emphasized planning improvements and better management information, and the Office implemented the initial phases of a new personnel cost projection system.

The Office of Printing and Photographic Services (OPPS) has the broadest Smithsonian-wide customer base of any service organization in the Institution. OPPS' responsibilities include taking photographs, processing photographic materials, and archival preservation of photographs. The Office has developed one of the finest environmental storage units in the world. By combining these advanced storage capabilities with new videodisc technologies, this unit will pioneer many techniques for the preservation of photographic images while making them simultaneously and universally available.

The Office of Risk Management (ORM) assists and advises the Smithsonian in identifying and controlling risks. ORM is also responsible for assessing the need for insurance and handling liability claims against, and made by the Smithsonian. It also develops the Smithsonian Disaster Preparedness Plan.

The Office of Sponsored Projects (OSP) is the primary point of administrative interface between the Smithsonian bureaus, offices, and research institutes that seek or receive grants and contracts from public and private organizations. OSP provides a range of administrative and financial services and resources. These services include pre-award review and approval, award acceptance, regulatory compliance, financial management, audit liaison, and indirect cost calculation.

The Travel Services Office (TSO) provides the most efficient service possible to Smithsonian travelers at the most economical rates available. TSO uses special fares and rates as well as government discounts for airlines, hotels, and car rentals to the maximum extent possible.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, the requested increase for administrative units totals 63 workyears and \$10,951,000 as detailed below:

<u>Activity</u>	<u>FTE</u>	<u>Amount</u>
Office of Inspector General	0	\$ 90,000
Office of Assistant Secretary for External Affairs	1	88,000
Office of Assistant Secretary for Finance and Administration	3	1,311,000
Office of Accounting and Financial Services	3	83,000
Office of Contracting and Property Management	2	176,000
Office of Environmental Management and Safety	1	65,000
Office of Equal Opportunity	20	600,000
Office of Human Resources	9	742,000
Office of Information Resource Management	15	1,884,000
Office of Printing and Photographic Services	1	325,000
Office of Risk Management	1	100,000
Disaster Preparedness	0	(200,000)
Workers' Compensation	0	387,000
Administrative Service Center	7	4,000,000
Health Insurance	0	1,050,000
Financial Systems Maintenance	0	250,000

Office of Inspector General Contract Audits (\$90,000) - The requested resources will supplement the existing contract audit function, currently staffed with two positions. This increase will enable the Office of Inspector General to complete timely contract audits and in turn benefit the Institution through reduced contract costs.

Office of the Assistant Secretary for External Affairs (1 workyear and \$88,000) - The responsibilities of the Office of the Assistant Secretary for External Affairs have expanded as a result of a transfer of media activities and increasing External Affairs units' program initiatives. The Office, by its nature, is intensely people-oriented, and efficient coordination between the Office of the Assistant Secretary for External Affairs and its bureaus and other Smithsonian bureaus is essential. The requested program analyst position (1 workyear and \$88,000) will help promote effective communication among the Smithsonian bureaus and offices and enhance outreach efforts through culturally diverse program initiatives.

Office of the Assistant Secretary for Finance and Administration--Chief Information Officer Support (1 workyear and \$36,000) - The requested increase will provide secretarial and office support for the director of information strategies, who will serve as the Institution's first chief information officer (CIO). The CIO will have responsibility for strategic leadership of Smithsonian-wide information and related technology initiatives to improve the effectiveness and efficiency of research, exhibition, library, publishing, and outreach programs and administrative operations. Without this position, the CIO's effectiveness will be compromised for lack of essential clerical and other support services.

Office of the Assistant Secretary for Finance and Administration--Chief Financial Officers Act (2 workyears and \$1,275,000) - The Chief Financial Officers (CFO) Act calls for an annual audit of financial operations throughout the Federal government. This audit requirement is one of a series of measures to improve the Government's stewardship over public funds and to strengthen the systems that provide the President, Congress, and the

American people with the information necessary to make informed decisions on how public funds are spent. The request for \$75,000 represents a proportionate Federal share of the projected total cost of an annual audit (to be performed on a contract basis by a private firm whose specialty is the audit of organizations whose missions, goals, and funding structures are similar to the Smithsonian's). Trust funds will support the remainder of this expense in acknowledgment of the Smithsonian's dual Federal/non-Federal funding structure. Without the requested \$75,000, it will be difficult for the Smithsonian Institution to engage in an audit of sufficient scope to meet the requirements of the CFO Act.

In addition, the Smithsonian plans to implement an off-the-shelf software package of accounts payable and purchase order modules as part of its efforts to comply with the CFO Act. This effort requires 2 additional workyears and \$1,200,000. Smithsonian staff will develop report layouts, provide technical support, perform detailed analysis, and develop specifications as well as document procedures and prepare training materials. Consultant support is required to perform analysis of procurement and payable processes, review implementation testing, and ensure quality and conformance with applicable rules and regulations. Through this program, the Institution should realize significant increases in the efficiency and effectiveness of its operations.

Office of Accounting and Financial Services (3 workyears and \$83,000) - The volume of the Smithsonian's financial records continues to grow, and these records are constantly being researched by accountants, auditors, investigators, and others. Microfilming and archiving records on a timely basis are essential to permit ready access to records and information. At present, the microfilming and archiving process is operated by one employee and will develop an even larger backlog unless additional personnel resources are allocated. An additional records library clerk (1 workyear and \$23,000) will ensure that financial records are microfilmed and archived on a timely basis.

Accounting operating procedures require a postaudit of claims on each travel voucher. The time standard for auditing a travel voucher is 45 days from the date that the voucher is received. Achieving the 45-day standard is not possible with the current staffing level of 2 workyears and the recent average annual increase of approximately 8 percent in the volume of travel vouchers. Currently, the audit of a travel voucher is taking an average of 90 days from receipt, and as the volume increases the turnaround time will also increase. To avoid further delays in auditing vouchers and to achieve an acceptable turnaround time, the Institution requests an additional accounting technician (1 workyear and \$26,000).

Finance and Administration management has initiated plans and goals for updating policies and procedures as part of a Federal mandate to improve efficiency in operations. OAFS is responsible for developing and maintaining numerous accounting and finance policies and procedures. The accounting and finance policies and procedures require continuous analysis to assess efficiency, implement changes, and train the Institution's staff. At present, these requirements are not being fully met, and consequently some policies and procedures are extremely outdated or lack proper assessment. In addition, there are not adequate resources to train staff to follow these procedures. OAFS requests a fiscal analyst (1 workyear and \$34,000) to concentrate its efforts in updating policies and procedures and enhance training.

Office of Contracting and Property Management (2 workyears and \$176,000) - With the increased diversity of programs and activities serviced by OCPM, there is a critical need for an additional senior contract specialist to provide specialized knowledge and service,

with potential to generate revenue. As a trust instrumentality of the U.S. Government, OCPM is responsible for contracts that are funded through both appropriated and nonappropriated sources. The demands for specialized contractual arrangements have steadily increased in both volume and complexity in direct proportion to the entrepreneurial vision of Smithsonian management and the increased emphasis on potential revenue production. This position will provide critically needed resources to maintain fiduciary responsibility for the Institution.

A critical aspect of implementing the Smithsonian-wide Accounting and Management Information System is the successful interface of its various financial and asset administrative systems. This interface is especially important in contracting and property management, which, by the nature of its responsibility, is the focal point of financial transactions and data collection for required reports, record keeping, and tracking purposes. For this reason, a financial systems administrator is essential both to ensure the automation necessary to meet the current demands of OCPM operation and to direct the operation so as to guarantee optimum compatibility with and enhancement of the master system.

Office of Environmental Management and Safety (1 workyear and \$65,000) - The requested increase will provide the resources necessary to meet the Institution's statutory requirements to ensure full compliance with the Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), and other Federal agency regulations. This compliance will fulfill the Institution's obligations to provide staff and visitors with a safe and healthful environment in which to work and visit.

The resources will permit the Institution to supplement an existing program although specific resources have not, to date, been earmarked for the program. The Institution has undertaken an agency-wide asbestos assessment program to identify the types, condition, and locations of asbestos-containing materials in all Smithsonian buildings. This information facilitates effective asbestos-abatement management throughout the Institution. The Institution is responsible for developing and implementing a comprehensive management program to protect visitors, staff, and collections where asbestos-containing materials have been identified.

OEMS requests 1 workyear and \$65,000 to coordinate an Institution-wide Asbestos Operations and Maintenance Program. The Office will monitor and coordinate periodic on-site asbestos inspections, develop and implement asbestos abatement and operations/maintenance programs, and coordinate the ranking of asbestos abatement work. The incumbent will ensure that workers are properly trained in specific techniques and general safe work practices in asbestos areas.

The Institution must comply with Federal agency regulations. It must also protect the health and safety of its staff and visitors. This increase will facilitate compliance with these statutory obligations.

Office of Equal Opportunity (20 workyears and \$600,000) - The requested increase will strengthen and expand the Office of Equal Opportunity's professional development program for current junior Smithsonian staff. The program, initiated in FY 1990 as the Step-Up 90 program, allows bureaus and offices to identify staffing needs that are underrepresented by minorities and women. With the requested increase, the Institution will competitively announce additional positions for current Smithsonian staff following upward mobility guidelines.

Selected candidates will enter a career track (professional, technical, administrative, clerical, or blue collar) position at their current grade level and train for the targeted level. The bureau or office will receive funding to a maximum of the grade 6 level to supplement personnel compensation allotted for the eventual targeted grade. The difference in salary level and total allotment will cover the cost of technical training, formal education, or on-the-job training.

The requested increase will add a total of 20 targeted positions at the GS-4 through 12 grade levels or wage grade equivalents to the current program established in FY 1990. The requested increase for salary/benefit resources for the new positions is \$520,000. The Institution also requests a central training and administrative support fund of \$80,000, for a total increase of \$600,000.

Office of Human Resources (9 workyears and \$742,000) - The Institution has often lost good job candidates for its various specialized positions because of the length of time involved in the hiring process. Staffing of personnel specialists in OHR has not kept pace with the growth of the Institution over the past several years. The result has been a slow deterioration of the level and quality of services provided to the Institution and the public. The requested increase will expedite the hiring process concurrent with efforts to recruit women and minorities.

-- Operations Division Staff Increase (4 workyears and \$244,000) - Four GS-12 personnel specialists will provide classification, staffing, and employee relations services to several Smithsonian units. These four positions are needed to keep up with recent expansion of the Smithsonian employee population. OHR personnel falls well behind in number of personnel specialists realistically warranted.

-- Policy Division Staff Increase (2 workyears and \$140,000) - Two personnel policy specialists are necessary to develop and implement several needed management programs. They are the Federal Employees Pay Comparability Act (FEPCA) for Federal employees and the comparable provisions for Trust employees. Policy expertise is also required in the development area of staffing, merit promotion, and executive personnel programs. A paramount requirement is the development of a revised performance appraisal and recognition system and the attendant manager of education and training.

-- Space Deficiency (\$200,000) - Office space reconfiguration will provide needed additional workstations and permit some internal organizational changes to take place that will increase productivity and enhance good supervision.

-- Operations Division-Clerical Support (3 workyears and \$90,000) - Increased clerical support in the Operations Division is essential to providing acceptable business-like responses to the public concerning employment inquiries and the status of job applications.

-- High Speed Copier (\$68,000) - The purchase of a high-speed/high-volume copier will enable OHR to provide better personnel support and to respond more quickly to urgent demands, thus increasing OHR's service capability.

Office of Information Resource Management (15 workyears and \$1,884,000) - Addressing the computing "infrastructure gap" is central to today's research, education, and administrative objectives and lays the foundation for the future. Like other invisible program infrastructure needs, the requirement for additional resources does not constitute a new or growing program. Instead, the investment in information technology tools enables the Institution to underwrite the costs of computing as a general utility service, provides

adequate computing resources, and meets the demands of current obligations and planned applications.

-- Central Computing (10 workyears and \$700,000) - In FY 1992, the Institution requested \$3,335,000 for a new mainframe computer, replacement of the library and archival system, and support for increased processing capacity for administrative requirements. For FY 1993, OIRM seeks the restoration and redirection of this funding for needed staff (9 workyears), and reoccurring operational expenses associated with the new systems. Building on the FY 1992 request, OIRM requests the addition of a new operating system environment (1 workyear and \$550,000) and a tape library (\$150,000) to continue updating central computer operations.

The requested funding for staff positions and ongoing operational expenses will provide necessary support service to maintain and enhance operation software for multiple computer systems and multiple data bases. The introduction of Multiple Virtual System (MVS) on the central computer will improve transaction-processing response times for financial systems and programmatic-processing systems requiring consistent transaction response times. The automated tape library will permit access to magnetic tape files for researchers and others working on weekends. Additionally, service to system users will improve through elimination of erroneous tape mounts and decrease in the time between request for a file and its availability for processing. The requested resources will help OIRM meet the demands of dynamically changing processing requirements, increasing numbers of operating software components, and changes in communications strategy for computer services.

-- Research Systems and Support (1 workyear and \$70,000) - The research systems program supports the use of information technologies by Smithsonian researchers. Modern technology is a basic component of research infrastructure. Information technologies, specifically computer hardware and software, are essential components of modern research. Automated systems are required to collect vast amounts of data and conduct rigorous analysis. Resulting information needs to be mapped, modeled, or reduced for understandable presentation. Ultimately, the results must be published and disseminated to the public. The entire research process, resulting in contributions to knowledge, requires modern computer technologies and the support functions necessary to use these technologies effectively.

This request focuses on a programmatic deficiency in the area of data acquisition. Contemporary instrumentation, used in many of the research activities of the Smithsonian, collects and records information that can be automatically stored on existing field and laboratory computers. Technical support staff must develop hardware and software interfaces between the instruments used to acquire data and the computers used for analysis. Because of staffing deficiencies, few of these automated interfaces actually exist.

OIRM will use the requested funds to hire and support one staff position to develop and maintain automated data acquisition systems. These systems will be deployed for use by Smithsonian laboratory and field research projects. This request will increase the overall effectiveness and benefit Smithsonian research initiatives through the infusion of modern information technologies.

-- Communications Services (2 workyears and \$114,000) - Timely and accurate communications services directly affect the ability of Smithsonian organizations to serve the public and collegial constituencies. Programmatic information affecting the public and research

community can be hampered by delayed or nonfunctioning equipment. Unnecessary expenses result from service installation delays or missed deadlines. The requested increase will permit timely and dependable delivery of communications services and will eliminate unnecessary expenses associated with delayed or postponed service installations.

With staffing levels comparable to pre-AT&T divestiture levels, the Institution can return to establishing predictable and dependable service installation targets with the reasonable assurance of meeting them. Published schedules, user feed-back, and job and cost-tracking systems will be possible. In addition to these cost and management improvements, program units can again plan their activities and workload with an expectation of having the necessary communications support available when needed. The Smithsonian's communications service environment must be restored to the level necessary to ensure that the Institution's programmatic objectives will not deteriorate due to inadequate support in this important area.

-- Personal Computer Maintenance and Replacement (2 workyears and \$1,000,000) - As many of the Institution's personal computer resources are reaching the end of their life expectancy, maintenance must include a plan for replacing nonfunctioning equipment. This plan will ensure that day-to-day technical assistance needs are met for all Smithsonian organizations.

OIRM will initiate a program for on-site consultation to identify and repair minor problems and organize cyclical replacement of failing computers at 20 percent per year. The program will include assessing problems in the functioning of personal computers and suggesting solutions. Centralized maintenance and replacement will provide a cost-effective method of improving computer technology availability.

Office of Printing and Photographic Services (1 workyear and \$325,000) - Since FY 1987, the number of pages printed by OPPS' Duplicating Branch has increased by more than one million each year. This increase has been handled through impressive efforts by the unit staff, greater use of overtime, and the continued introduction of high-volume equipment. However, the staff is now seriously overextended and equipment maintenance costs are exceeding budgets.

Additional funding and staff are needed to rescue the Duplicating Branch from an increased demand for services from organizations throughout the Institution and a dangerously aging equipment base. This request will allow OPPS to phase in new high-tech equipment that will allow it to continue to serve the entire Institution's bureaus and offices. The Institutional emphasis on reaching wider and more diverse audiences will directly and continually benefit from these resources.

OPPS will require approximately \$1 million in replacement equipment between now and 1996. The \$300,000 requested for FY 1993 will increase the OPPS base to phase the equipment replacement purchases over a three-year period and then fund continuing replacements as equipment becomes four to five years old. In addition, OPPS requests a duplicating equipment operator (1 workyear and \$25,000) to operate the new equipment.

Office of Risk Management (1 workyear and \$100,000) - The Institution seeks additional resources to further its Disaster Preparedness Program for all facilities within the Smithsonian. Implementation of this program will reduce the risk of loss of life, facilities, collections, and interruption of public programs.

The requested resources for a disaster preparedness coordinator (1 workyear and \$60,000) and support costs will allow the Institution to initiate a cooperative program with Smithsonian bureaus, Government agencies, and independent organizations. The program will expand the Institution's efforts to develop a generic facility disaster preparedness program and will set a standard for the museum community. The program, once fully developed, can then be used by other cultural organizations, nationally and internationally, to reduce their risk of loss from potential disasters.

Investment of minimal funding will further assure the public that its cultural resources are subjected to minimum risks. To do otherwise would continue to place the Nation's cultural heritage at risk of loss from a disaster.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Funding of these centralized services from both appropriated and nonappropriated sources produces a ratio of Federal and Trust-fund administrative support approximately in proportion to the operating program expenditures of the Institution as a whole. The amounts shown under Unrestricted General funds represent administrative expenditures for those units that are organizationally under Administration. Other units that receive administrative allotments appear in the appropriate section of the budget. For example, administrative costs for the Smithsonian Astrophysical Observatory appear within its Nonappropriated Trust Funds section. This section also includes expenditures for producing, distributing, and marketing photographic material and slide sets and funds to help defray the costs of the Office of Printing and Photographic Services. The Office of Equal Opportunity receives a program allotment that supports community outreach through exhibits and publications specifically aimed at women and minorities. Funds also provide for the identification and implementation of new financial and administrative management systems. Special Purpose funds include gifts received through unrestricted bequests that, in accordance with the Bylaws of the Board of Regents, subsequently transfer to the endowment. Anticipated expenditures in the Special Purpose category include support of studies in ornithology, computer conversion costs, a computer cost center, and small amounts used for legal seminars and research.

Restricted Funds - This category includes foundation grants for scientific research publications and general research projects and expenditures against investment income earned on endowment bequests.

FACILITIES SERVICES

OFFICE OF DESIGN AND CONSTRUCTION

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	48	3,072	9	449	-	-	-	-	-	-
FY 1992 Estimate	48	3,263	9	525	-	-	-	-	-	-
FY 1993 Estimate	56	3,829	9	525	-	-	-	-	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Office of Design and Construction (ODC) provides architectural, engineering, and facility planning services to support the development, operation, maintenance, repair, and improvement of the Smithsonian's physical plant. These support services include short- and long-range feasibility analyses, master plans, design and engineering studies, design development, contract document preparation, project management, contract administration, and preparation of cost estimates for construction. The staff reviews contracts, plans interior design and space renovations, provides technical consulting support, and operates construction field offices.

For FY 1993, ODC requests an increase of 8 workyears and \$566,000 for Major Construction and Repair and Restoration support (6 workyears and \$460,000) and for the National Museum of the American Indian design and construction management (2 workyears and \$106,000).

PROGRAM - The Office of Design and Construction (ODC) plans, designs, constructs, and financially manages all new construction, renovation, restoration, and repair projects for all Smithsonian facilities. Projects are located in the Washington metropolitan area, Arizona, Florida, Maryland, New York City, and Panama.

Project Management - ODC provides project management and professional assistance to Smithsonian bureaus to guarantee a safe, proper environment for visitors, staff, and the National Collections. ODC also oversees projects and financial resources for the Repair and Restoration (R&R) program, which preserves, repairs, rehabilitates, and prevents code violations for the Smithsonian's aging physical plant and for the Construction program for new facilities. In addition to repairs and construction, ODC provides professional assistance related to exhibition construction and other space modification projects. Primary services include orchestration of planning, design, and construction activities; financial management of all projects; and review of exhibit designs to ensure compliance with safety, health, and accessibility requirements and compatibility with existing building systems.

Facilities Planning - Facilities planners provide strategic planning services for master facility plan studies and related analyses as well as develop funding and construction strategies for overall R&R and Construction programs. These services include defining preliminary, detailed facility requirements data for future projects and advice on construction priorities. Examples of FY 1993 projects include:

- programming and planning for the National Museum of the American Indian facilities on the Mall and at Suitland, Maryland;
- master development plan for the Smithsonian Environmental Research Center;
- technical studies, programming, and planning for the General Post Office Building;
- master development plan for collections storage and research at Suitland to address such needs well into the next century;
- an automated Smithsonian-wide facilities inventory that will identify existing resources, deficiencies, and future needs, enabling the Smithsonian to improve control over facilities.

Design and Construction - The design and construction staff administers architectural, engineering, and construction contracts; reviews exhibit installation projects; and supervises the execution of interior design and construction projects. Projects planned for FY 1993 include:

- the \$24 million George Gustav Heye Center for the American Indian Museum in New York City;
- the East Court Building at the National Museum of Natural History;
- replacement of the heating, ventilating, and air conditioning systems at the National Museum of Natural History;
- replacement of skylights and windows at the National Air and Space Museum;
- renovation of the Old Dominion Building at the Smithsonian Environmental Research Center;
- road repair at Whipple Observatory in Arizona;
- renovation of the building core and utility repairs at the McAlpin-Miller House and Fox House of the Cooper-Hewitt Museum;
- replacement of chillers at the National Museum of Natural History;
- replacement of the cooling towers at the National Air and Space Museum;
- removal of asbestos from various facilities;
- fire protection, disabled access, and health and safety improvements for various buildings and museums.

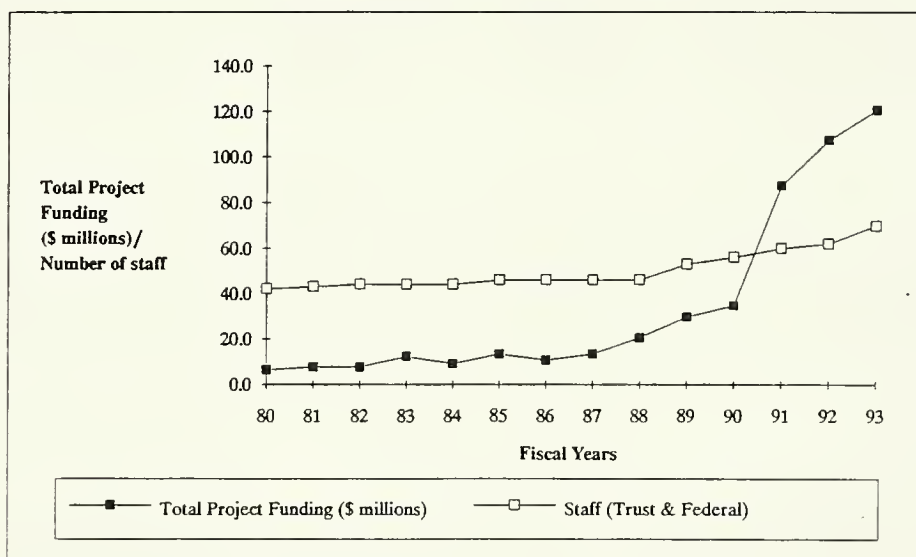
About 400 active projects are normally in progress in ODC. Of these, 50 - 75 are construction contracts, and the remainder are in a planning or design phase. In addition, approximately 100 exhibits receive review each year to ensure they meet code and life safety requirements.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, ODC requests an increase of 8 workyears and \$566,000 for Major Construction and Repair and Restoration support (6 workyears and \$460,000) and for the National Museum of the American Indian design and construction management (2 workyears and \$106,000).

Major Construction and R&R Support (6 workyears and \$460,000) - The Smithsonian has numerous construction and design projects under way or slated to begin shortly on the Mall and in Arizona, Maryland, the Republic of Panama, and New York City. The Smithsonian plans its construction and renovation projects so as to disrupt public access to the National Collections as little as possible, especially as the Institution includes the most frequently visited museums in the world.

It is imperative that the Smithsonian have sufficient staff resources to ensure that the museum and research facilities withstand high tourist use; meet life safety, health, and disabled access codes; and adequately house irreplaceable collections. A disproportionate ratio of staff to funding dollars is one indicator that these efforts are threatened. The following graph illustrates the increased dollar value of the ODC workload against essentially level staffing.

Total Project Funding Versus ODC Staff



The funding ODC requests will add one planner, three design architects/engineers, and two construction engineers (6 workyears and \$460,000). The planner will prepare master plans that define the parameters of projects and ensure that the programs positively reflect the overall goals OMB and Congress set for the Smithsonian. The three architects/engineers will be responsible for design activities, with an emphasis on code compliance, handicapped accessibility, historic preservation, and the meeting of customer

needs. The construction engineers will coordinate and supervise construction activities on a daily basis to ensure quality work and adherence to contract documents. They will also monitor projects to make certain they are completed on time and within budget.

Without the additional staff to manage this work, the Institution would expect to incur between 2 percent and 5 percent--or \$2.6 million to \$6.5 million--in additional expenses due to contract delays, lack of coordination and supervision, and disruption of bureau activities. Receipt of this request of \$460,000 for additional staffing will represent a significant savings to the public that can be used to further the long-term goals of the Institution.

National Museum of the American Indian Design and Construction Management (2 workyears and \$106,000) - Public Law 101-185 established the National Museum of the American Indian (NMAI). This new national Museum is the culmination of almost a decade of negotiations among the Heye Foundation, the City and State of New York, and the Smithsonian Institution. When the Custom House in New York City opens to the public in 1993, joined by the new museum on the Mall at the turn of the century, NMAI will stand as a tribute to the many and varied contributions of American Indian, Eskimo, Aleut, native Hawaiian, and other Native-American cultures. Secretary Robert McC. Adams has said that NMAI "is likely to alter beyond all expectation public understanding of the American Indian people."

The opening of NMAI's Custom House facility in 1993 will typically involve many small, last-minute construction and exhibit changes that can only be managed quickly and efficiently by in-house staff. The Institution is seeking funding in FY 1993 for staff to meet these contingencies and to support the "working" drawing or contract document phase of the Suitland facility project. The Mall facilities and Suitland project design will represent about \$7.4 million in contract design fees. The requested positions will assist senior management and supplement existing staff to assure high-quality design vis-a-vis the framework of NMAI programs. In turn, high-quality design will assure that the Museum, the public, and the National Collections enjoy the best possible conditions and avoid costly repair and alterations in the future.

Two full-time, dedicated positions are essential for successful implementation and completion of the building program of the new National Museum of the American Indian. These positions are an architect and an engineer (2 workyears and \$106,000). Their primary responsibilities will be helping administer service contracts for design, reviewing design and constructibility at both the Mall museum and Suitland storage facility, repair and restoration of the Research Branch facility in New York City, and the processing of exhibit design and construction projects at the Custom House in New York City. It is vital to the success of these projects that they are appropriately staffed to ensure completion on time and within budget.

The National Museum of the American Indian will provide the American people and the world with the most comprehensive view of the various American Indian cultures. Adequate staffing for design and construction will assure that this potential is accomplished in an efficient and cost-effective manner.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds provide salary and partial support costs as ODC services both Trust and federally funded programs.

OFFICE OF PROTECTION SERVICES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	800	26,190	-	23	1	87	-	-	-	-
FY 1992 Estimate	801	28,103	-	23	1	90	-	-	-	-
FY 1993 Estimate	851	29,579	-	23	1	107	-	-	-	-

*FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Office of Protection Services (OPS) protects the visitors, staff, collections, and facilities of the Smithsonian Institution by providing guard, physical security, and medical services.

For FY 1993, OPS requests an increase of 50 workyears and \$1,476,000 to provide guards for a newly reopened Freer Gallery of Art (7 workyears and \$176,000); to support automation (2 workyears and \$100,000); to reduce the shortage of guards in public facilities (38 workyears and \$900,000); and to implement a drug-free workplace program (3 workyears and \$300,000).

PROGRAM - The Office of Protection Services' mission is to develop and manage activities that:

- ensure that the National Collections and other properties entrusted to the Institution are protected and secured, while permitting an appropriate level of public access to them; and
- provide a proper level of occupational medical services to the staff and emergency medical services to staff and visitors.

The first aspect of the mission is a responsibility for assessing the protection requirements of Smithsonian facilities and addressing them through a guard force, an alarm network, and locks and other security devices. The second aspect of the mission is a responsibility for planning and providing occupational health services for employees, taking appropriate action to eliminate health hazards from the workplace, and providing emergency medical treatment for the injuries and sudden illnesses of visitors and staff. To accomplish its two-part mission, OPS employs a large force of security officers and a staff of administrators, training specialists, alarm systems specialists, technicians, investigators, museum security specialists, a medical officer, nurses, and other professional medical staff.

The security force operates 24 hours a day, every day of the year. It patrols and provides access control at the major Smithsonian facilities in and near Washington, D.C., the Cooper-Hewitt National Museum of Design in New York City, and the Smithsonian Tropical Research Institute in Panama. Uniformed guards and plainclothes and K-9 officers are stationed at entrances and patrol in and around Smithsonian galleries and buildings. They respond to emergencies and signals of the alarm network that serves all Smithsonian facilities.

An extensive network of locks, alarms, and other devices is necessary to control access to and protect Smithsonian facilities and properties. OPS advises curators and exhibitors on appropriate security systems, conducts security management surveys to determine the protection requirements of Smithsonian facilities, investigates alleged and actual violations of the law occurring on Smithsonian premises and escorts many shipments of valuable objects to and from the Smithsonian.

The investigative program is designed to resolve collection losses, thefts, and other serious internal matters referred. Similar investigative assignments are also referred from the retail operations of the Smithsonian Institution. Successful resolution of collection losses and thefts requires coordination with the United States Attorney, the Department of Justice, and the court system.

OPS provides occupational medicine services and an employee assistance program. The medical officer, occupational health nurses, employee assistance counselors, and emergency medical technicians identify hazardous work environments, monitor the health of employees exposed to certain occupational hazards, provide first aid for on-the-job injuries of employees, and conduct drug-free workplace programs in the Smithsonian Institution. Major program elements include medical surveillance of employees exposed to various hazards; employee assistance counseling and referral for treatment related to substance abuse and emotional problems; training programs for management personnel in dealing with impaired employees; immunizations for employees on official travel orders; health education; major disease screening programs; stringent monthly inspections of all Smithsonian food service facilities; and cardiopulmonary resuscitation (CPR) and first aid training for employees.

OPS staff is involved in a number of outreach activities both with other American museums and communities and with international organizations. For example, OPS conducts a national conference on the protection of cultural property every year, attracting participants from across the United States, Europe, and Canada. The director serves on several international security committees, and the OPS medical officer is represented on several committees, including local and national occupational medical organizations and specialized groups involved with Smithsonian concerns such as the medical aspects of scientific diving. On a regular basis, OPS provides advice to museums, libraries, churches, historic sites, and corporations throughout the United States on security systems for facility, exhibit, and collection protection.

EXPLANATION OF PROGRAM INCREASE - For FY 1993, OPS requests an increase of 50 workyears and \$1,476,000 to provide guards for a newly reopened Freer Gallery of Art (7 workyears and \$176,000); to support automation (2 workyears and \$100,000); to reduce the shortage of guards in public facilities (38 workyears and \$900,000); and to implement a drug-free workplace program (3 workyears and \$300,000).

Freer Gallery of Art Guard Coverage (7 workyears and \$176,000) - The Freer Gallery of Art will reopen to the public in FY 1993 after having been closed for renovation and

reconstruction since September 1988. Upon reopening, new areas not previously open to the public will require the establishment of additional guard posts. During the time since the Freer closed, the majority of the guard workyears devoted to the facility were still needed to provide security during construction, while a few were temporarily shifted to support the Quadrangle.

OPS will use the requested workyears and funds to provide coverage for new exhibit areas (basement gallery patrol, ground floor patrol, and an early exhibit patrol and relief) and for a new public entrance at Independence Avenue.

The only alternatives available to OPS, should additional workyears and funds not be forthcoming, will be to cut back on protection to other museums, thereby requiring the closing of public galleries or not opening the new public entrance at the Freer and prohibiting visitors from visiting the new public areas created by the Freer renovation. These additional staff resources are critical if OPS is to meet the needs of the reopened Freer and preserve the present level of security coverage and public access in other museums.

Automation Support (2 workyears and \$100,000) - This request for funds and staff will allow OPS to train its employees to use computers and provide software tailored to the information needs of the Office and its clients. These resources will increase the effectiveness of OPS employees, and thus benefit the Institution at large and the public as skilled employees use well-developed software to deliver services more efficiently.

Over the past several years, OPS has significantly increased its reliance on automation and personal computers for the provision of services to the public and to other parts of the Institution. Each major facility has a sophisticated automated security monitoring system, and each major office, including each guard headquarters, has personal computers to assist in performing its regular tasks and in communicating with others, both within and outside OPS. There are more than 20 minicomputers and almost 100 personal computers joined in several separate networks around the Washington, D.C., area.

OPS proposes to develop a computer training program for its employees and improve its ability to develop and coordinate computer applications. OPS intends to conduct this training on its own, since the cost of contracting with private trainers can be prohibitive. A full-time computer applications trainer will not only develop and maintain courses that satisfy the needs of the Office but also evaluate the strengths and weaknesses of computer users. Once OPS has assumed responsibility for the development of computer applications, this Office can then eliminate dependence on contractors, troubleshoot software problems immediately, and satisfy new requirements more quickly.

Funds in this request will enable OPS to hire a computer applications trainer (1 workyear and \$42,000), a programmer/analyst (1 workyear and \$42,000), and provide related support (\$16,000). The computer applications trainer will develop and conduct educational classes for computer system operators and office workers; write and maintain user guides and reference manuals specific to OPS computer applications; and assist in the development of overall training plans for OPS employees.

The programmer/analyst will work with a variety of computer languages and softwares to tailor off-the-shelf software to OPS requirements. For example, there is a need to develop templates, style sheets, and macros and to write, maintain, extend, and document custom applications. These customized software applications involve medical records and

the Smithsonian Institution Proprietary Security System. Funds from this request will also support the purchase of computer publications, instructional materials such as computer-based training, training videos, and the development of computer labs for training and systems development.

OPS must respond quickly to requests for medical and security information. Therefore, it aims to provide staff not merely with technical literacy but also a vision of the role that automation can play in increasing the effectiveness of the Office. An improved training program and the use of applications specifically developed for internal use will allow the Office to put highly skilled workers with ready access to required information at the service of the Institution and the public.

Reduction of Guard Shortage (38 workyears and \$900,000) - Each quarter OPS surveys the number of guard posts that need to be staffed and translates that need into the number of guards that would provide adequate coverage. The conversion from the number of posts to the number of guards considers the total number of hours in a day, the total number of days in a week that a post must be covered, the number of hours a full-time employee is eligible to work in a year, less the number of hours expected to be used for annual leave, sick leave, training, and mandatory rest breaks (reliefs).

The current shortfall (as of July 1, 1991) totals 137 guard workyears for 88 posts. Although the shortfall varies somewhat from quarter to quarter, according to activities in Smithsonian facilities, the number of posts has consistently gone up from one year to the next, even if only in small increments. The current shortfall of 88 posts does not include the additional posts for the reopening of the Freer Gallery of Art, since those posts do not have to be covered at this time (thus the separate request for Freer Gallery of Art posts elsewhere in the 1993 budget justification). As Smithsonian museums and bureaus bring new facilities on-line, or as they open new public galleries in areas not formerly open to the public, the number will continue to rise.

In FY 1993, OPS requests staffing resources to reduce the current shortfall by roughly one-fourth, (i.e., by 38 guard workyears needed to staff 23 posts), broken down as follows: 6 posts (10 workyears) in the National Museum of Natural History, 6 posts (10 workyears) in the National Museum of American History, 6 posts (10 workyears) in the National Museum of American Art/National Portrait Gallery, 3 posts (5 workyears) in the National Air and Space Museum, and 2 posts (3 workyears) in the Quadrangle.

These requested workyears and funds are essential if OPS is to provide adequate protection to the Smithsonian collections, employees and public.

Drug-Free Workplace Program (3 workyears and \$300,000) - As part of OPS's occupational health and employee wellness program, the Institution intends to implement a drug-free workplace program oriented toward prevention and rehabilitation. The program will address a problem that affects employees at the Smithsonian Institution, as it does in every workplace. While there exists a definite legal and regulatory basis for occupational health activities, including drug-free workplace efforts, the Institution's rationale for these activities is its belief that staff deserves the best and most appropriate occupational health programs possible, including screening, examination, counseling, and assurance of a drug-free workplace.

Funding at this level will secure a baseline program to foster a drug-free workplace. Most of the funds requested will go directly to that effort, with a portion of the funding

to enhance other aspects of the Institution's employee wellness program. Specific activities include educating employees regarding the effects of substance abuse in both work and personal lives; training supervisors and managers regarding substance abuse in general and in identifying and dealing with those employees whose performance at work has been impaired due to substance abuse; performing drug testing on all selected applicants for positions designated as appropriate for testing; and performing drug testing randomly on a portion of incumbents in those positions.

The funding requested will secure staff to plan, administer, operate and provide related support to implement the program. New staff will include a training specialist (1 workyear and \$43,000), at the nurse/counselor professional level, to conduct training; an employee assistance counselor (1 workyear and \$51,000) to handle the case load generated by increased recognition of abuse problems; and a program coordinator (1 workyear and \$60,000) to plan and manage the contracted laboratory specimen collection activities, to establish and maintain the random selection mechanism for incumbent testing, and to ensure the integrity of the program. A portion of the request will fund contract services for testing and medical review of any positive test results. In addition, the program requires 1,500 square feet of medical space, office furnishings, personal computers, and other equipment (\$146,000).

A baseline drug-free workplace program is essential if OPS is to educate and assist Smithsonian employees with drug- and health-related issues.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are provided by an allotment and by reimbursements for the use of guard services at special events and lectures at Smithsonian facilities. These funds are used to purchase supplies, materials, and equipment.

OFFICE OF PLANT SERVICES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		GOV'T GRANTS & CONTRACTS	
			General		Special					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1991 Estimate	492	42,833	6	1,233	8	545	-	3	-	-
FY 1992 Estimate	492	44,942	5	1,183	9	551	-	3	-	-
FY 1993 Estimate	499	46,572	5	1,183	9	560	-	5	-	-

* FTE = Full-time equivalent

**FTP = Full-time permanent

ABSTRACT - The Office of Plant Services (OPlantS) operates, maintains, and repairs 14 museum and art gallery buildings and many other work and collection storage areas located in the Washington area and New York City. In support of research, exhibitions, education, and other public programs, OPlantS provides utilities, transportation, mail services, exhibits renovation, and other program services. OPlantS also provides technical assistance to several Smithsonian units located outside the Washington metropolitan area, including the Smithsonian Tropical Research Institute in Panama, the Fred Lawrence Whipple Observatory in Arizona, and the Smithsonian Environmental Research Center in Edgewater, Maryland.

The Horticulture Services Division, South Group Facilities Management, and Quadrangle Facility Management are also part of this line-item. The Horticulture Services Division, (formerly the Office of Horticulture but now a part of OPlantS) maintains the Smithsonian grounds and a greenhouse-nursery to service the Institution's horticultural needs. South Group Facilities Management offers a range of maintenance services for the Arts and Industries Building and Smithsonian Institution Building. Quadrangle Facility Management offers similar services for the Arthur M. Sackler Gallery, the National Museum of African Art, and the S. Dillon Ripley Center, located in the Quadrangle Complex.

For FY 1993, OPlantS requests an increase of 7 workyears and \$430,000 to strengthen buildings and facilities maintenance. An increase of \$1,200,000 justified in the Uncontrollable Increases section of this budget will support the Institution's utilities and rent.

PROGRAM:

I. Office of Plant Services (OPlantS) - The Office of Plant Services operates, maintains, and repairs more than 5 million square feet of building spaces. The Office maintains building interiors and exteriors, elevators, escalators, and mechanical and electrical equipment. Additionally, OPlantS maintains lighting and refrigeration components and oversees emergency property repairs. The Office provides trade and craft

support for the Institution, including plumbing, electrical, woodcrafting, painting, and plastering efforts. In addition to supporting Smithsonian research projects and office relocations and modifications, OPlantS supports exhibition installations and public events throughout all Smithsonian facilities.

OPlantS' automated Facility Monitoring System continually analyzes and controls mechanical equipment throughout the Institution. This system monitors areas of buildings requiring stable humidity and temperature control and alerts a control center when deviations from normal conditions occur. Since this automated system identifies abnormalities so quickly, immediate adjustments avoid costly repairs and prevent damage to the National Collections.

OPlantS' automated Preventive Maintenance System schedules regular preventive maintenance on building operating systems, ensuring increased reliability, reduced repair costs, and longer life. This system schedules preventive measures for fire prevention systems, guard stations, and automatic lighting as well as roofing systems and heating, ventilating, and air conditioning systems in all museums and the Smithsonian Environmental Research Center.

The Office operates a supply warehouse to stock and distribute frequently used building maintenance and custodial supplies and materials. To obtain the best prices, OPlantS purchases these materials in bulk. In addition to supporting office relocations and modifications, OPlantS offers packing, crating, warehousing, and moving services for museum objects and collections. The Office also provides a full range of transportation services for the Institution, as well as mail services and postage monitoring.

In FY 1991, the Office of Horticulture became the Horticultural Services Division in the Office of Plant Services. This division applies the discipline of horticulture in educational, scientific, research, exhibition, and display activities throughout the Smithsonian. Garden furnishings from the collections and plants propagated and grown at the Smithsonian greenhouse-nursery are used in landscape design and interior and exterior displays. Sources from the Horticulture Branch Library support these programs. Exterior pest control, removal of trash from the gardens, and snow and ice removal are also the responsibility of this division.

In FY 1991, OPlantS provided program support to museums and other Smithsonian organizations, including preparation of space for 130 new exhibitions. Notable among these exhibitions were "Moscow: Treasures and Traditions" and "African Traditions" at the International Gallery; "Boyd Webb" at the Hirshhorn Museum and Sculpture Garden; "Information Age" at the National Museum of American History; "Sharks" and "Java Sea" at the National Museum of Natural History; "Flight in the Arts" at the National Air and Space Museum; "Winslow Homer in the 1890s: Prout's Neck Observed" at the National Museum of American Art; and "Contemporary Beads" and "Glassworks" at the Renwick Gallery. OPlantS craftspersons renovated office space to accommodate changing program needs in various locations; completed energy conservation projects at the Smithsonian Institution Building, the Hirshhorn Museum and Sculpture Garden, and the National Museum of American History; and continued installing automated exhibit lighting systems. The Facilities Inspection Program identified and estimated additional facility repair needs to be performed by OPlantS and/or contract personnel under the Repair and Restoration of Buildings program. Unfunded requirements identified by the inspection program form the basis of the annually compiled backlog of essential maintenance and repair.

The Potomac Electric Power Company commended the Office of Plant Services for continued participation in the electrical Load Curtailment Program and the New Building Design Program.

A new automated irrigation system was purchased and installed in FY 1991 by the Horticultural Services Division to monitor water usage by building and assist in cost savings and conservation efforts. Cataloguing efforts began for the Archives of American Gardens, which will facilitate the preservation of this unique collection and make it easily available for research.

II. South Group Facilities Management - South Group Facilities Management is responsible for cleaning, minor maintenance, labor services, lamping, craft services, shipping and receiving, and special events for the Arts and Industries and Smithsonian Institution Buildings. This office also contracts and coordinates maintenance, trash removal, pest control, and renovation projects for these buildings.

III. Quadrangle Facility Management - Quadrangle Facility Management provides a wide variety of support services to the Education Center of the S. Dillon Ripley Center, National Museum of African Art, Arthur M. Sackler Gallery, Resident Associate Program, National Associate Program, Smithsonian Institution Traveling Exhibition Service, and International Center. These services include space scheduling, custodial, labor, rigging, minor maintenance, lamping, shipping and receiving, and related services. The automated scheduling and maintenance program enhances the reliability and effectiveness of housekeeping, public events, and related support services.

EXPLANATION OF PROGRAM INCREASE: For FY 1993, OPlantS requests an increase of 7 workyears and \$430,000 to strengthen buildings and facilities maintenance. An increase of \$1,200,000 justified in the Uncontrollable Increases section of this budget will support the Institution's utilities and rent.

Buildings and Facilities Maintenance Program (7 workyears and \$430,000) - Additional resources directed toward facilities maintenance will provide a safer, more energy-efficient, and more aesthetically pleasing environment for the visiting public and Smithsonian staff. Increased attention to deferred maintenance will result in lower operating costs and improved energy efficiency.

With the requested resources OPlantS will hire maintenance mechanics (7 workyears and \$280,000), who will decrease the backlog of essential maintenance and repair. OPlantS also will purchase required supplies and materials (\$100,000) and equipment (\$50,000) needed to perform these essential maintenance projects. As Smithsonian facilities age, additional problems continually surface through the Facilities Inspection Program. Without additional resources to begin correcting these problems in a timely manner, the backlog will continue to escalate and Smithsonian facilities will deteriorate at an accelerated rate.

These additional resources will help ensure long-term preservation of all Smithsonian facilities, more energy-efficient operations, and better environmental control of the Institution's aging physical plant. This increase will also result in better control of facilities costs and services, a safer environment for visitors and staff, and improved public appearance.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds:

I. Office of Plant Services - Allotments provide unrestricted Trust funds to cover salaries and support costs in the Office of Plant Services. These allotments also provide the Trust share of space rental costs for administrative activities located at L'Enfant Plaza. Reimbursements from Trust-funded client organizations provide Special Purpose Funds for support services offered by OPlantS. These funds purchase supplies, services, equipment, and landscaping materials.

II. South Group Facilities Management - The primary source of nonappropriated funds is from reimbursements for special events. The amount varies depending upon the nature of the event and the requirement for overtime. This money has been used to purchase special event equipment, computer hardware and software, and sanitary supplies for rest rooms.

III. Quadrangle Facility Management - Trust funds are generated through reimbursements from special events. The amount varies each year depending on the nature of the events and the overtime required. The funds assist in purchasing supplies, services, and equipment for special events.

NATIONAL ZOOLOGICAL PARK
CONSTRUCTION AND IMPROVEMENTS

1991 Appropriation.....	\$6,636,000
P.L. 99-177, The Balanced Budget and Emergency Deficit Control Act of 1985 (as amended).....	\$6,635,914
1992 Estimate.....	\$8,000,000
1993 Estimate.....	\$15,948,000

Appropriations to this account provide funding for:

- repairs, alterations, and improvements to plant property;
- additions to existing facilities and minor new facilities, including exhibits;
- plans and specifications for construction;
- renovation, restoration, and construction of new facilities outlined in the Master Plan.

The Zoo contracts for most construction and improvement projects. If the contractor's estimates are above acceptable cost levels, a more economical alternative is to hire permanent or temporary labor to accomplish the work. The account also funds related expenses such as relocation of animals during the renovation or construction of facilities and major grounds maintenance resulting from storm damage.

In keeping with the 1889 charter, the National Zoological Park endeavors to "administer and improve" the Zoo for "the advancement of science and instruction and recreation of the people" (20 U.S.C. 81). The National Zoological Park (NZP) complex includes 163 acres in the Rock Creek Valley of Washington, D.C., and a 3,150-acre Conservation and Research Center (CRC) located in Front Royal, Virginia. Since 1890, exhibition and public educational functions have been centered in the Rock Creek Valley portion of the National Zoological Park. Conservation, training, research, and breeding are conducted at both Rock Creek and the Conservation and Research Center. Since 1975, CRC has assumed primary responsibility for Zoo programs to save threatened and endangered animal species.

The composition of the FY 1993 request is as follows:

Rock Creek Master Plan:	
Olmsted Walk Landscaping	\$ 250,000
Aquatic Trail--Living in Water (Phase I)	6,930,000
Grasslands and Forest Exhibit (Phase I)	1,785,000
Loop Trail Graphics	315,000
Conservation and Research Center Development Plan:	
Road Improvements/Extensions	1,155,000
Maintenance Facility	1,050,000
Multi-Purpose Animal Facility Design	263,000
Utilities Distribution Upgrade	500,000
Rock Hill Pasture Facility (Phase I)	400,000
Renovation, Repair, and Improvements:	
Rock Creek	\$2,350,000
Conservation and Research Center	<u>950,000</u>
TOTAL REQUEST	\$15,948,000

ROCK CREEK MASTER PLAN - The National Zoo's Rock Creek facilities have been undergoing major renovation and improvements through implementation of the Master Plan. Congress has appropriated a total of \$61,110,000 from FY 1974 to FY 1991 to carry out major portions of the Master Plan. Full implementation of the Master Plan, as revised in 1986, will place the National Zoological Park among the world's finest zoos.

Olmsted Walk Landscaping (\$250,000) - For FY 1993, the Zoo requests \$250,000 to implement the Olmsted Walk Landscaping Program. With the completion of the final phase of the Olmsted Walk, it is time to landscape the area. In keeping with the Zoo's Olmsted heritage, the Zoo plans to provide simple, functional, and biologically instructive landscaping in the public areas along the walkway.

Olmsted Walk runs the length of the Zoo from the main pedestrian entrance on Connecticut Avenue to the lower entrance at Beach Drive. The walkway encompasses both zoo entrances, the concession plazas, the lawns, the public picnic areas, and many of the major exhibit buildings. Establishing and maintaining a coherent landscaping treatment throughout this area will provide unity and distinctive identity.

The landscaping program will screen vehicle parking areas, create shade, add color, and develop diversity for the benefit of the visiting public. The program will place large shade trees in the plaza areas, in open lawns, and along the parking lots. Deciduous trees will provide shade in summer and allow warming sun in winter. The program will use planter beds to protect canopy trees while lending visual interest and a pleasant background to seating in paved plaza areas. Tough, durable, easy-to-replace plants will be selected for the plaza areas and the borders of the walkways.

The horticulture theme centered around the Olmsted Walk Landscaping Program will enhance the visitors' understanding of plants and their relationship with animals and humankind. The landscaping will serve as a focal point for the Zoo's conversion to a BioPark by highlighting issues such as economical uses of plants, plant-animal co-evolution, rare and endangered plants, and habitat destruction.

Aquatic Trail-Living in Water, Phase I (\$6,930,000) - This funding of \$6,930,000 will be used to construct an introductory module, "Living in Water," and a cluster of new habitat exhibits as part of the Zoo's Aquatic Trail. Within the cluster of exhibits, the Zoo will focus on key aquatic ecosystems and habitats, many of which are highly endangered. These will include the American Lake, South Atlantic Coast, Chesapeake Marsh, and Mangrove Swamp. To make the series of exhibits both entertaining and educational, each exhibit will offer interpretations from a slightly different point of view. At the same time, the exhibits will supply sufficient content for a more extensive inquiry by interested visitors.

The American Lake will provide an underwater visit at a typical inland lake in the eastern United States. The exhibit will focus on the plant and animal responses to temperature stratification of lakes, the food chain with special emphasis on its plant components, and fish schooling and communication.

The South Atlantic Coast will display a small colony of black-footed penguins, bringing penguins to NZP for the first time. The interpretation will focus on penguins as both predators and prey, the ecology of their food sources, their evolutionary adaptations to the marine environment including analogies to fish and marine mammals, and their spectacular communal nesting.

The Chesapeake Marsh will use a local habitat and familiar animals to raise issues of global concern. It will emphasize current threats to the Chesapeake Bay's animal life and ecological balance, including their economic and recreational implications. The facility will illustrate the important ecological and historical research carried on by the Smithsonian Environmental Research Center, located on the Chesapeake Bay.

The Mangrove Swamp will feature one of the most widespread--and fastest disappearing--of all tropical habitats. It will emphasize the erosion-reducing and land-forming role of mangrove areas and the complex lifestyles and adaptation of the various species that inhabit the system. The Mangrove Swamp will be adjacent to the Zoo's Amazonia Exhibit, as the ecosystem typifies the estuaries of all great tropical rivers.

Grasslands and Forest Exhibit, Phase I (\$1,785,000) - As part of its revised Master Plan, the Zoo will construct three new exhibits, each representing a distinct ecological and geographic area: American Grasslands, African Grasslands, and Forests. Funding of \$1,785,000 in FY 1993 will provide for the design and initial site preparation for the three exhibits. Actual construction will begin in early FY 1994. Each exhibit will put major emphasis on uniquely adapted flora and fauna and the interconnectedness of the ecosystem.

The American Grasslands exhibit will consist of two major habitats: the North American Prairies and the South American Grasslands. Separating the two exhibits, a planted berm will conceal a service yard and holding buildings. Bison, coyotes, sandhill cranes, prairie dogs, and gopher snakes will populate the prairie exhibit. The complex and unique assemblage of prairie plants will be a major feature. The South American section will house mara, giant anteaters, capybara, maned wolves, rhea, and guanacos. The history of grasslands and the adaptations of Native Americans to live in grassland areas will be emphasized.

The African Grasslands will also consist of two major habitats: the African Savanna and the African Desert. The trails in the two subdivisions will include screening and specimen plantings to create the illusion of being in Africa. Animal species such as zebra, ostrich, wildebeest, flamingo, spotted hyena, blesbok, gerenuk, and dwarf mongoose will inhabit the savanna. A nocturnal segment will include animals such as the zorilla, aardvark, fennec fox, cobra, and insects. The desert will feature gazelle, crowned crane, meerkat, duiker, and klipspringers.

The Forest will include three habitats: West African Forest, Southeast Asian Forest, and the Sulawesi Forest. The exhibits will be located on the hilly terrain east of the Zoo's Connecticut Avenue entrance. Mandrill, leopard, bongo, Eld's deer, tapir, muntjac, anoa, and babirusa will be among the featured animals. The Forest will show prominently the remarkably convergent lifestyles of forest-dwelling people in each of the habitat exhibits. The art and artifacts of indigenous peoples will illustrate their long history of adaptation and inventiveness.

Loop Trail Graphics (\$315,000) - In conjunction with the completion of the Olmsted Walk, the Zoo will provide the graphics necessary to bring together all the pedestrian walkways in the park. This request for FY 1993 is for \$315,000.

With the completion of the Olmsted Walk, the Zoo established a clear pedestrian thoroughfare from the Connecticut Avenue entrance down to the Rock Creek entrance. This efficient route connects most of the Zoo's exhibit facilities. However, it bypasses the

Bird House, with its wetlands exhibit, the exhibits in Beaver Valley, and the Zoo's Aquatic Habitat complexes. The Loop Trail system will connect these major exhibits, along the Valley Trail, and other animal areas with the main Olmsted Walk using a graphics system NZP calls "Wayfinders." The system was installed in 1990 and has proven very popular.

CONSERVATION AND RESEARCH CENTER DEVELOPMENT PLAN - The Zoo's Conservation and Research Center (CRC) conserves wildlife, particularly vertebrate species threatened with extinction. Its facilities are dedicated to the captive propagation of selected birds and mammals, and its research and breeding programs are carried out collaboratively on five continents. The Zoo has established a Development Plan for the facility that calls for establishment of an infrastructure to serve equally well all the major functional paths the Center may follow in the next 20 years. The following projects for FY 1993 conform to the Center's Development Plan.

Road Improvements/Extensions (\$1,155,000) - The Zoo will use the \$1,155,000 requested for FY 1993 to upgrade and extend the Conservation and Research Center's roadway system. The Center's roadway network has three surface types: paved roads, gravel roads, and unpaved jeep trails. This road system has not been substantially upgraded in more than 20 years, and many of the roads have deteriorated as a result of overuse and annual freeze-thaw cycles.

Weather resistant gravel roads will be extended to newly renovated pastures and facilities in the underdeveloped areas of the Center. The Center will upgrade its jeep trails, which provide access to within one-quarter mile of any point on the property. The current trails are unimproved cleared corridors requiring the use of four-wheel-drive vehicles. Substantial portions of the jeep trails were pioneered in 1977 during the perimeter fence construction project. Once upgraded, the Center's roadways will provide a valuable circulation link for fence maintenance, wildlife studies, and perimeter security.

Maintenance Facility (\$1,050,000) - To improve operations, security, and accessibility, the Center proposes to consolidate into one facility its maintenance and grounds units. The two operations are presently located in ten separate buildings throughout the property. This arrangement is inefficient in terms of time, supervision, and costs.

The Center will construct, at a cost of \$1,050,000, a new building that will consolidate all operational shops and maintenance and grounds personnel at one location. This new facility will have an added benefit of eliminating traffic through the central animal areas of the Center.

Multi-Purpose Animal Facility Design (\$263,000) - In FY 1993, the Center will design, at a cost of \$263,000, a large, quick-response facility for the propagation and research of small to medium-sized endangered species of mammals. The structure will use the same passive solar heat/natural light employed so successfully in the Center's Small Animal Facility. The new building, scheduled for construction in FY 1994, will be located in the middle of the Center. It will have both indoor and outdoor enclosures for a variety of highly endangered species.

Utilities Distribution Upgrade (\$500,000) - Funding of \$500,000 requested in FY 1993 will be used to extend electrical utilities to several portions of the Center that are

currently without electrical service and to upgrade and extend several old sewer lines in the Center's central complex.

Rock Hill Pasture Facility, Phase I (\$400,000) - This portion of the Center lies west of Route 522. The area contains several large areas suitable for hooved stock breeding, but it is currently undeveloped. Phase I of this project, scheduled for FY 1993 at a cost of \$400,000, will enable the fencing of several large pastures. Phase II, scheduled for FY 1997, will involve the construction of two breeding sheds for exotic ungulates.

RENOVATION, REPAIR, AND IMPROVEMENTS:

Rock Creek (\$2,350,000) - The National Zoological Park is responsible for the repair and preventive maintenance of its facilities. The Zoo strives to maintain a safe environment for its visiting public and staff, provide ecologically suitable and comfortable enclosures for the animals, and maintain all buildings in good condition. The funding included in this request will help ensure that the Zoo's preventive maintenance program will not include a large backlog of major repair projects.

The Zoo's Rock Creek facilities, located on 163 acres, include more than 450,000 square feet of buildings and 160 square feet of roofs. Along with the Park's perimeter fence measuring 10,564 linear feet, the Zoo's in-ground utility distribution system includes more than 4,600 linear feet of high-voltage electrical lines, approximately 4,000 linear feet of medium-voltage electrical lines, 16,000 linear feet of water mains, 6,000 linear feet of gas mains, 28,000 linear feet of sewer lines, and 14,000 linear feet of storm drains. The Park's preventive maintenance program includes the care of these systems to ensure safe operation of the total facility.

The major repair and renovation projects scheduled for the Rock Creek facility in FY 1993 include:

- reroofing two major Zoo buildings;
- bringing fire protection and prevention systems up to code requirements;
- continuing preventive maintenance of heating, ventilating, and air conditioning (HVAC) systems (ongoing program);
- renovating and replacing interpretive signage (ongoing program);
- repairing/replacing the cooling tower in the Education Building;
- repaving some interior zoo roadways.

The National Zoological Park requests \$2,350,000 to continue its annual program of renovation, repair, and preventive maintenance for its Rock Creek facility. This level of funding will enable the Zoo to provide the required level of general maintenance to all the plant property.

Conservation and Research Center (\$950,000) - The Zoo's Conservation and Research Center at Front Royal is a nonpublic facility devoted to the conservation of endangered wildlife through programs in propagation, research, and international training. The 3,150-acre facility includes more than 89 structures ranging from animal shelters to research laboratories and residences. The property has 2 1/2 miles of roads, 20 miles of jeep trails, and more than 30 miles of fences.

Funding requested in FY 1993 will enable the Center to continue the required maintenance and upkeep of these diverse facilities. Specific projects scheduled for FY 1993 include:

- reroofing several residences and animal barns;
- replacing the substrate in two ungulate barns;
- renovating an unused barn for passerine research;
- constructing two ungulate sheds in Slatehill and Meade pastures;
- renovating the interiors of two apartments adjacent to the Radio-Tracking Laboratory.

The \$950,000 that NZP requests for FY 1993 will support the Center's preventive maintenance program and help reduce costly repairs at this important facility in the future.

REPAIR AND RESTORATION OF BUILDINGS

1991 Appropriation.....	\$31,191,000
P.L. 99-177, The Balanced Budget and Emergency Deficit Control Act of 1985 (as amended).....	\$31,190,595
1992 Estimate.....	\$31,600,000
1993 Estimate.....	\$36,500,000

Smithsonian facilities include 15 museums and gallery buildings in Washington, D.C., and New York City and total more than 5.5 million square feet of building space. These museum buildings house research and collections management activities and a wide range of exhibitions in the fields of science, history, technology, and art. The Institution also operates and maintains restoration, storage, and aircraft and spacecraft display facilities in Suitland, Maryland, and New York City; centers for biological research, conservation, and education in Panama and on the Chesapeake Bay near Edgewater, Maryland; a center for astrophysics in Cambridge, Massachusetts; and the Whipple Observatory on Mt. Hopkins in Arizona. These facilities range in age from new to more than 140 years old, and many appear on the registers of historic landmarks.

The Repair and Restoration of Buildings (R&R) account pays the cost of repairs, corrective measures to meet life safety and health regulations, and replacement or renovation of major building components or equipment. This budget document discusses the repairs and renovations at the National Zoological Park as a separate justification.

The heavy public use of buildings and the demand for constant temperature and humidity levels to protect the National Collections exacerbate the natural aging process of building materials, equipment, and systems. The Smithsonian now achieves longer-than-average predicted life for most equipment. It is a measure of the effectiveness of the Smithsonian's preventive maintenance program that this longevity is accomplished in the face of a 24-hour operation that places the equipment under a more severe duty cycle than normal. Eventually, however, even effective preventive maintenance and regular repair programs are not able to keep the equipment components of building systems operating. The Institution must overhaul heating, ventilating, and air conditioning (HVAC) systems and electrical and plumbing systems periodically to replace deteriorated equipment, wires, ducts, and pipes. It must repair the effects of weather on the exteriors of buildings and guard against interior damage. In addition, the enactment of new codes and regulations calls for building modifications to ensure a safe and healthful environment and access for visitors and staff with disabilities.

In past years, funding levels for maintenance, repair, and preservation of buildings have not kept pace with the rate of deterioration. A substantial backlog of essential repair work exists. These repairs are vital to ensure the continued reliable functioning of building equipment and systems, long-term preservation of buildings, and compliance with life safety and health codes and standards. The most recent (January 1991) estimate of the backlog of currently unfunded projects is \$216 million. This figure represents some reduction from the January 1990 level of \$229 million, for which Congress appropriated \$31.2 million in FY 1991. It is important to note, however, that the backlog is not a static list of repair projects that can be reduced by each annual increment of funding. Every year a number of problems that did not previously exist must be added to the backlog. For example, a piece of equipment might fail or reach the end of its useful life; or a roof might develop serious leaks where a significant problem was not evident the year before. Newly promulgated life safety and health codes and heightened sensitivity to environmental hazards may require work not formerly recognized as needed. In addition, a number of

factors contribute to increased cost estimates for repairs already included in the backlog. In some cases, additional deterioration or damage caused by delay increases the cost of individual projects. More detailed studies of previously identified problems and the inflationary effect of project delays also contribute to higher cost estimates for the work. Only sustained major funding will allow the Institution to reduce the backlog in an orderly manner to ensure preservation of its buildings for continued use by future generations.

The Smithsonian separates projects under the R&R program into two categories and accordingly requests funding in two subaccounts. The first subaccount, Major Capital Renewal, includes funds for the cyclical replacement of major building systems and equipment and major renovation projects required to ensure long-term preservation of the buildings. These projects are different in magnitude, expense, and planning complexity from routine ongoing restoration work, repair projects, or replacements undertaken when a piece of equipment fails. More than half the identified backlog consists of these major replacement requirements for HVAC and electrical systems at the Air and Space, American Art and Portrait Gallery, American History, Arts and Industries, Natural History, Renwick Gallery, and the Smithsonian Institution buildings.

The second R&R subaccount is Repairs, Restoration, and Code Compliance. Funding requested through this subaccount will eliminate, over a period of time, the remainder of the backlog of repairs and other work needed to meet safety and health requirements. This subaccount encompasses six categories of routine maintenance and repair projects. This budget request presents an aggregate amount for each of the six categories, with a description of the kinds of work planned.

The composition of the FY 1993 R&R budget request follows:

REPAIR AND RESTORATION OF BUILDINGS

MAJOR CAPITAL RENEWAL		\$5,550,000
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
General Repairs	5,430,000	
Facade, Roof, and Terrace Repairs	12,250,000	
Fire Detection and Suppression Projects	920,000	
Access, Safety, and Security Projects	5,995,000	
Utility Systems Repairs	4,300,000	
Advanced Planning and Inspection	<u>2,055,000</u>	
Subtotal		<u>\$30,950,000</u>
TOTAL REQUEST		\$36,500,000

Following the narrative description of the program for FY 1993, a listing shows all planned projects by building and R&R category.

MAJOR CAPITAL RENEWAL - Projects in this category involve replacing major building systems and components that have outlived their useful lives. Complete replacement ensures long-term operation and preservation of the building. Modifications to the building also improve energy efficiency, meet fire detection and suppression requirements, and correct hazardous conditions. By coordinating these kinds of tasks, the Institution saves money and avoids repeated disruption to activities in the building. The Smithsonian achieves

operating efficiencies as well by designing new building systems and components to work together. For example, by installing multiple-paned windows and increasing insulation, the Smithsonian can select heating and cooling equipment with lower capacity. The equipment costs less to purchase and install, and long-term operating costs are lower. The impact of renovation work on programmatic activities is a key factor in planning a major project. Work of this magnitude causes serious disruption to activities in the building. The Institution must relocate staff and collections from the areas under construction to prevent damage, allow staff to continue working during the construction period, and ensure continued public access and safety.

For FY 1993, the Smithsonian requests \$5,550,000 for the projects described below:

Air and Space Building (\$150,000) - Construction of the Air and Space Building was started in 1974, and it opened to the public in the summer of 1976. The National Air and Space Museum has experienced a variety of environmental problems with the building almost from the beginning. With funding requested in FY 1993 (\$150,000), the Institution will complete a physical survey of all major building components, analyze the interactions of present and future physical plant modifications, and evaluate the impact of proposed programmatic changes on the overall operation of the building. The staff will then develop a phased implementation plan for physical plant maintenance and renovation to provide an appropriate environment for museum operations in an energy-efficient manner. The implementation plan will form the basis for future budget requests for construction.

American History Building (\$840,000) - A 1982 study of the HVAC system of the American History Building, now 27 years old, recommended replacement of the deteriorated heating, ventilating, air conditioning, and refrigeration equipment systems and controls. Replacement of these systems will ensure continuous provision of required environmental conditions in an energy-efficient manner. The study also recommended modifications to the building envelope to increase energy efficiency. The Institution recently completed the required window and roof replacement and facade repairs using previously provided funding.

The 1986 Master Coordination Plan established a detailed schedule for replacing the HVAC and related systems. This plan also incorporated anticipated life safety and fire protection improvements and asbestos-removal work so that workers could isolate vertical portions of the public areas of the building and accomplish all work required in each segment at the same time. This scheduling of complex but interrelated projects results in less disruption to the National Museum of American History's activities and saves money through a single contract for each vertical portion. The final phase of the project will incorporate all work required in the office areas of the fourth and fifth floors. A separate follow-on project will perform similar work in the basement of the building.

Work in each vertical quadrant includes replacing the air-mixing boxes, controls, and air-handling equipment; installing new sprinkler, smoke detection, and emergency lighting systems; constructing new fire walls and other fire protection improvements originally outlined in the Fire Protection Master Plan; installing conduit and cabling to support the security and communications networks; and removing asbestos present in mechanical rooms and other areas of the building. The Museum is coordinating this project with its exhibit renewal program. The project includes the cost of relocating artifacts and personnel displaced in the course of the work.

The first phase of this project began with funding received in FY 1987 (\$1.2 million) and FY 1988 (\$1.6 million) and included all work required in the east quadrant of the

building. The Institution has completed this phase. Work on Phase II, in the west central quadrant, began with funding received in FY 1989 (\$2.1 million) and is now essentially complete. The construction contractor began Phase III, in the west quadrant, in FY 1990 with \$3,675,000 provided that year and will complete this phase in December 1991. The \$3,790,000 received in FY 1991 will support Phase IVa construction in the east central quadrant, which will begin in October 1991. The FY 1991 funds will also design the final phase of work (Phase IVb), which will include construction on the fourth and fifth floors. The Institution anticipates \$6,200,000 in FY 1992 for Phase IVb construction, which will be completed in early FY 1995. The Smithsonian requests \$600,000 in FY 1993 for additional security and relocation requirements associated with this phase. A final increment of funding, to be sought in FY 1994, will allow the Museum to return collections and staff displaced during the project.

The Smithsonian also requests \$240,000 to complete design of the HVAC replacement and related work in the basement of the Museum and to relocate staff and collections that will be affected by the work. Renovation of the basement systems was not included in the original scope of the Major Capital Renewal project. However, problems over the past several years associated with air circulation and exhaust fumes and the deterioration of HVAC and electrical equipment make it imperative that the systems be replaced with equipment of sizes and types suited to present and projected use of the space. During the replacement procedure, the Museum will remove asbestos from existing equipment. The Institution expects \$550,000 in FY 1992 to begin preparation of design documents for the first phase of the basement work and to plan the relocation of staff and collections affected by the construction.

Arts and Industries Building (\$660,000) - The Arts and Industries Building is one of the finest examples of Victorian architecture in the Nation. Originally designed to house representative artifacts from the Philadelphia Centennial Exposition, the construction of the building was started in April 1879 and completed in March 1881. The last major renovation of the HVAC system took place in the 1960s, with some additional work done in the mid-1970s to prepare for the opening of the "1876 Centennial Exhibition." The heating, ventilating, and air conditioning equipment and electrical and other utility systems are now reaching the end of their useful life and must be replaced. Most spaces are heated and cooled by antiquated mechanical systems. Pressurized steam pipes, chilled water pipes, and electrical conduits are located in utility trenches under the first floor. These trenches contain asbestos and are filled with abandoned pipes and conduits, which make access for inspection, maintenance, and repair disruptive, difficult, and costly. In addition, the building envelope has substantial deficiencies and its HVAC system cannot maintain optimum environmental conditions required for museum collections. With the recent decision to use the building to house the proposed African-American Museum, this problem becomes critically important to correct.

Over the past several years, the Smithsonian has performed a series of studies concerning physical plant improvements and utility tunnel replacement for the building. The staff is currently contracting with an architectural and engineering firm to evaluate these studies and develop recommendations for the sequencing of work. On the basis of these recommendations, the Institution will use funds requested in FY 1993 to begin design of the first phase of work (\$360,000) and will develop future budget requests for construction funding. Additional funds requested for FY 1993 (\$300,000) will allow the Institution to begin relocating staff and collections affected by the work.

Natural History Building (\$3,500,000) - Over the past several years the Institution undertook a number of separate studies of the Natural History Building to address energy conservation, fire detection and suppression, communications, security upgrading, asbestos abatement, and other remedies to building deficiencies, especially in the HVAC and electrical systems. As a result of these studies, the Institution realized the magnitude of the work required and initiated a Master Implementation Plan to ensure that the Natural History Building is maintained in an effective manner. The Institution will schedule work so as to minimize disruption within the building and reduce costs by grouping tasks. The Museum will coordinate the exhibit reinstallation program with the renovation project. The Institution will fill in the East Court space with a new building to provide permanent space for expansion of the Museum's current activities. During the renovation project this building will provide the Museum with staging space for temporary relocation of staff and collections affected by the renovation. Construction of this building will require relocation of the current chiller plant to a new vault under the parking lot as well as accommodation for other functions now in the East Court space. The Construction section of the budget request includes a justification for the East Court Building.

Guided by a Fire Protection Master Plan developed in 1979, fire protection improvements and asbestos removal and containment work are well under way. However, the replacement of the HVAC and critical electrical equipment is the most significant aspect of this project and thus governs the overall work schedule. The majority of the HVAC equipment is now more than 25 years old and requires replacement to avoid system failure. The automatic temperature control system is obsolete and does not operate satisfactorily. The age of 90 percent of the electrical lighting and power panels in the building is in excess of 20 years. Some of the electrical panels date from 1910 and present a potential safety hazard. Other panels installed in the 1960s, which met standards at the time, would not earn a UL (Underwriters' Laboratory) listing for today's established safety standards, and replacement circuit breakers are no longer available. The main high-voltage switchgear equipment, which serves all the transformers for the Natural History, Arts and Industries, and Smithsonian Institution buildings, is approximately 40 years old. The Smithsonian must completely replace these components and other related electrical equipment because repair parts are no longer available.

The Institution completed a detailed plan for the replacement of building systems at the Natural History Building in fall 1989. The plan spreads the work over a number of years to provide the most cost-effective construction sequence, minimize disruption of programs, and prevent Museum closings. The scope of work includes:

- replacing the HVAC system with a new centralized system located in new penthouses over the east and west wings;
- replacing the chiller plant with updated equipment in a new vault beneath the southeast corner of the parking lot;
- modifying the building envelope, specifically by replacing the roof over the wings and installing roof insulation, replacing single-glazed windows in the wings with double-glazed windows, replacing roof rain leaders, and installing air locks or vestibules at entrances and loading docks;
- centralizing laboratories with new exhaust air systems;

- improving the automatic temperature control system;
- connecting the equipment to a central control and monitoring system.

The project will incorporate remaining fire protection work originally conceived under the Master Plan. Work will also include removing or encapsulating asbestos insulation located in the attics and attached to equipment, ductwork, and piping throughout the building.

The Institution has received a total of \$21,900,000 through FY 1991 for this project and anticipates an additional \$5,730,000 in FY 1992. These funds will cover the cost of project planning and design of early phases of the work, begin renovation work, and allow initial relocation of staff and collections. The design of the new underground chiller plant is complete, and construction will begin in late summer 1991. The Institution has contracted for detailed design of the mechanical penthouses over the east and west wings and roof and window restoration and will replace the wing windows using currently appropriated funds. The Smithsonian has also used appropriated funds to make a number of interim repairs to the existing systems. Asbestos removal projects in the East and West Court mechanical towers were completed in FY 1991, and a similar project in the utility tunnels of the building will begin shortly. The funds available through FY 1992 will also construct and equip the mechanical penthouses over the wings; replace and reinsulate the roof systems over the wings; continue window restoration, asbestos removal, and interim equipment repairs; design the next stage of construction; and prepare for the relocation of staff and collections affected by future phases of work.

The Institution requests \$3,500,000 in FY 1993 to repair or replace the windows in the central portion of the building (\$2,500,000); design the next phase of the project (\$500,000); and prepare staff and collections for relocation during future construction (\$500,000).

Smithsonian Institution (Castle) Building (\$400,000) - The Institution's first building is now more than 140 years old. The last renovation of the major building systems took place in the 1960s. The mechanical (HVAC) and electrical systems are near the end of the lifespans normally projected for such systems. In addition, the new Visitors' Center and the proliferation of computers and other office equipment have greatly changed the heating and cooling loads of the building. New, modern equipment, sized to meet the needs of current and projected activities in the building, will provide more effective climate control and ensure continued operation and long-term preservation of the building. Energy conservation opportunities can also be expected to provide future savings in operating and maintenance costs. During renovation, the Institution will install sprinklers in the Great Hall, a project previously deferred because of the major disruption it would have caused to the Woodrow Wilson Center immediately above.

With funds provided in FY 1991, the Institution is conducting an energy audit to identify utility system replacement requirements, energy conservation opportunities, and associated architectural modifications. The FY 1993 request of \$400,000 will begin design. Actual construction will be coordinated with the relocation of the Woodrow Wilson Center to new quarters in another building in 1995 or 1996.

REPAIRS, RESTORATION, AND CODE COMPLIANCE - Projects in this category include:

- minor, unscheduled, but essential repairs to sidewalks, roads, parking lots, waterproofing, electrical and lighting systems, and plaster walls;
- repairs to facades, roofs, skylights, terraces, and windows;
- installation of heat and smoke detection systems, sprinkler and chemical suppression systems, fire doors and fire-rated walls, lightning protection, and improvement of exit capability;
- improvements to ensure access for people with disabilities, asbestos abatement, renovations to elevators, correction of exhaust or ventilation problems, implementation of life safety and health code modifications, and security modifications and lighting;
- repairs and energy conservation improvements to HVAC, plumbing, electrical, and communications systems, and improvements to rest room facilities;
- advanced design of future-year projects and long-range planning for repair and restoration of Smithsonian facilities and feasibility studies of specific problem areas.

For FY 1993, the Smithsonian requests \$30,950,000 for the projects listed below:

General Repairs (\$5,430,000) - Funds requested in this category support a wide variety of projects. These funds provide resources for minor, unscheduled, but essential repairs that the Institution cannot anticipate specifically or that do not fit into one discrete category. For FY 1993, the Institution requests \$5,430,000 for such projects as:

- repairing walls and restoring interior finishes in several locations, including the Rotunda and north lobby area of the Natural History Building, the fourth and fifth floors of the American History Building, and the attic of the Freer Gallery Building;
- renovating the interior of the Old Dominion Building and replacing the dock storage shed and boat ramp at the Smithsonian Environmental Research Center;
- repairing sidewalks, parking lots, garages, and roads at various locations;
- implementing revegetation of areas around road construction and mountain buildings at the Whipple Observatory to restore the natural habitat;
- making general repairs to off-Mall facilities;
- handling emergency repairs required throughout the Smithsonian.

In addition, the requested funds will allow implementation of improvements to Smithsonian properties to provide consistent public amenities and visual cohesion among buildings on the Mall, such as pedestrian and vehicular movement, signage, disabled access, and rest and relaxation areas.

Facade, Roof, and Terrace Repairs (\$12,250,000) - Maintaining the integrity of the exteriors of all Smithsonian buildings is critical. This maintenance will prevent major structural and interior damage and deterioration due to age, water intrusion, and weathering. Proper care will ensure a safe environment for visitors, staff, and collections. In addition, energy conservation and environmental control demand weather-tight exteriors. Work in this category includes a variety of projects accomplished cyclically according to the life of the materials used. For example, roofs need replacing nearly every 20 years; facade joints need recaulking and repainting about every ten years; and window frames and other exterior trim need repainting every five years. Several Smithsonian buildings now require large-scale restoration. The Institution plans to offer additional protection for building exteriors through an enhanced preventive maintenance and repair program.

For FY 1993, the Institution requests \$12,250,000 for facade, roof, and terrace repairs. Planned projects include roof and skylight inspection, repair, or replacement at the Natural History Building, the Arts and Industries Building, and the Silver Hill Facility. Work will continue at the Smithsonian Institution Building to restore the facade stones. Other projects funded from this category include:

- replacing the skylight and window wall systems at the Air and Space Building to correct leakage and maintain the integrity of the building envelope;
- repairing or replacing windows and exterior doors at the Cooper-Hewitt Museum, the Anacostia Museum, and the Arts and Industries Building;
- repairing stonework at the American Art and Portrait Gallery Building;
- making miscellaneous repairs to the terrace and pavements surrounding the American History Building, the East Garden (Mary Livingston Ripley Garden) between the Arts and Industries Building and the Hirshhorn Building, and the Research Branch of the Museum of the American Indian;
- replacing the deteriorated aluminum dome over the 60-inch telescope at the Whipple Observatory;
- repairing and painting wooden and metal facades and building elements at a variety of locations.

Fire Detection and Suppression Projects (\$920,000) - A major Institutional priority is to provide the best fire protection and safety measures available under today's standards and with state-of-the-art technology. Every major Smithsonian facility has a fire protection master plan. The Institution has now completed much of the required work, and additional modifications will be incorporated into the Major Capital Renewal projects in several buildings. For FY 1993, the request of \$920,000 will continue fire protection master plan work in the McAlpin-Miller House and Fox House of the Cooper-Hewitt Museum and make minor changes to meet code requirements at the Air and Space Building. The Institution will also make fire protection improvements at the Research Branch of the Museum of the American Indian and the Museum Support Center. Work will include the installation of heat and smoke detection systems, sprinkler and chemical suppression systems, fire doors and walls, and the improvement of exit capability. The Smithsonian will use a portion of the FY 1993 funds to install lightning protection on several of its

buildings, to prevent potential fire and electrical equipment damage due to lightning strikes.

Access, Safety, and Security Projects (\$5,995,000) - The Institution continues to emphasize providing better access to its facilities for persons with disabilities, improving environmental conditions for the health and safety of visitors and staff, and correcting facility conditions that threaten the security of the National Collections.

For FY 1993, the Institution requests \$5,995,000 for a number of important projects in these areas. Among the projects planned for correction of hazardous conditions are:

- continuing the asbestos abatement program throughout the Institution and removing asbestos at the McAlpin-Miller House and Fox House of the Cooper-Hewitt Museum;
- inspecting and renovating elevators at the Research Branch of the Museum of the American Indian to ensure safe operation;
- repairing the exterior emergency doors at the American History Building to provide safe egress routes in the event of evacuation;
- removing or replacing old underground storage tanks at a number of locations with new tanks with Occupational Safety and Health Administration (OSHA) mandated corrosion protection and spill detection or with above-ground tanks;
- modifications to the McAlpin-Miller House and Fox House of the Cooper-Hewitt Museum to improve access and egress capability to meet life safety codes.

The Smithsonian will continue a multi-year project to correct a number of deficiencies that impede accessibility to public spaces and amenities by persons with disabilities. The work will include improving entry by wheelchair, eliminating obstructions and overhead hazards, correcting elevator deficiencies, changing placement of drinking fountains, improving emergency warning systems, and providing seating space for wheelchair users and listening systems for the hearing impaired. Several specific projects will also improve access to the Cooper-Hewitt's McAlpin-Miller House, modify rest rooms at the Anacostia Museum and the Smithsonian Environmental Research Center, and install lifts to provide access to stages in the Quadrangle Complex and Natural History Building for persons with disabilities.

Projects for FY 1993 to improve security of the collections, staff, and visitors include:

- expanding the security system at the Whipple Observatory in Arizona;
- improving illumination around buildings and in parking lots on the Mall for more effective surveillance;
- installing a security system in the Fox House and improving perimeter security at the Cooper-Hewitt Museum complex;
- improving security and correcting heat gain problems in the Freer Gallery's Peacock Room;

- installing security monitors at the elevators on the garage level of the Air and Space Building;
- installing security doors and access control devices separating the public lobby areas in the Natural History Building from nonpublic areas.

Utility Systems Repairs (\$4,300,000) - Funds in this category will maintain, repair, and upgrade the heating, ventilating, and air conditioning systems and plumbing, electrical, and communications systems throughout the Institution's facilities. Ongoing renovations, repairs, and replacement of deteriorated equipment components are essential for ensuring reliable and energy-efficient operation of utility systems. The long-term preservation of the National Collections depends upon stable temperature and humidity conditions.

Energy management remains a high priority at the Smithsonian. Opportunities to conserve energy by adjusting equipment and modifying operations have already been implemented. The most significant energy savings opportunities that remain will result from upgrading HVAC systems, replacing obsolete equipment, and extending central automated controls for existing systems. The Institution modifies existing HVAC systems to accommodate programmatic growth, changes in the use of buildings, and the environmental needs of collections as they become better understood. The Institution uses an integrated approach to renovations and modifications to plan for long-range, systematic HVAC improvements that will meet museum environmental requirements in an energy-efficient manner.

Comprehensive HVAC studies and energy audits for most of the buildings facilitate planning of other improvements. The scope of HVAC studies includes field investigations of age, condition, efficiency, and performance of existing equipment, controls, and current operating conditions; reviews of existing drawings, specifications, operating manuals, and hygrothermograph records; analyses of the relationship between the building structures and HVAC systems; and assessments of programmatic needs for environmental control. The data gathered by these studies provide a basis for determining redesign or replacement needs of existing HVAC systems; developing construction cost estimates; identifying favorable payback opportunities; and establishing priorities for the repair, replacement, or modification of such equipment components as air-handling units, refrigeration machines, cooling towers, heat exchangers, automatic temperature and humidity controls, pumps, pipes, fans, filters, ductwork, and related electrical and plumbing systems. At the same time, energy audits investigate all factors relating to energy use, such as power-consuming equipment and building conditions (doors, windows, insulation, floors, and partitions). After identification of energy conservation opportunities and evaluation of costs and potential energy savings, plans will guide the renovation and improvement work. This process identified a number of major system replacements that the Major Capital Renewal subaccount will fund in addition to minor repairs and renovations requested in the Utility Systems Repairs category.

Funding of \$4,300,000 requested in FY 1993 in this category will support routine repair, replacement, and modification projects. These projects include:

- replacing the steam station in the Smithsonian Institution (Castle) Building and installing a communications raceway system serving the executive offices in the building;

- replacing boilers at the Smithsonian Environmental Research Center and the stairwell heating unit at the Anacostia Museum;
- repairing utility systems at the Cooper-Hewitt Museum, including modifications to the HVAC system of the McAlpin-Miller House and Fox House, improving electrical service to the Fox House, and implementing an energy study at the Carnegie Mansion;
- replacing the underwater electrical cable serving the Barro Colorado Island facilities of the Smithsonian Tropical Research Institute;
- installing a backup power system (uninterrupted power source - UPS) for the computer equipment at the Smithsonian Astrophysical Observatory facility in Cambridge, Massachusetts, to prevent loss of valuable research data during power fluctuations or failures.

Several planned utility improvement projects include installing state-of-the-art automated controls on HVAC equipment, expanding electrical capacity and distribution at the Air and Space and Renwick Gallery buildings, upgrading the lighting control system in the Carmichael Auditorium at the American History Building, and installing or repairing and expanding rest room facilities in the American History and Natural History buildings.

Advanced Planning and Inspection (\$2,055,000) - Funds in this category support projects to identify and analyze long-range repair and restoration needs and to design future-year projects in advance of funding requests. The amount of \$2,055,000 requested in FY 1993 will allow the Smithsonian to contract for planning and design of projects in the backlog of essential maintenance and repair. Funds requested for FY 1993 will also allow staff to develop solutions for several specific problem areas, including the continuing breakdown of the freight elevator in the Quadrangle Complex and possible relocation of the trash compactor at the American History Building.

The significant increase in funding in this category over previous years reflects the Institution's commitment to eliminating the backlog more quickly by improving planning and cost estimating and reducing costs in the R&R program. The ability to identify, in advance of funding requests, the precise requirements and costs of individual projects is key to the success of this effort. Thorough planning and development of design concepts will provide detailed estimates and identify logistical considerations that will allow staff to plan repair strategies and establish immediate and long-range budget requirements. In addition to improving the accuracy of cost estimates, design of projects in advance of funding will save the Institution in escalation costs by enabling the staff to award construction contracts as soon as resources are appropriated. Needed repairs will also be accomplished much sooner, thus preventing further deterioration and ensuring faster compliance with codes.

The higher funding level requested for FY 1993 will allow Smithsonian staff to complete planning and design in advance of appropriations for a greater portion of the projects to be included in the FY 1994 R&R program and will permit preliminary design of some of the projects expected to be in the FY 1995 program as well. The Institution will gradually increase the amounts requested in future fiscal years for advanced planning and design to allow preliminary design of the majority of projects in the R&R program prior to budget request. Greater advanced planning and design capability will improve significantly the overall cost effectiveness of the R&R program and will speed the elimination of the backlog of essential maintenance and repair work.

REPAIR AND RESTORATION OF BUILDINGS
Detail of FY 1993 Request by Building

<u>FACILITY, ACCOUNT, AND PROJECT TITLE</u>	<u>SUBCATEGORY</u>	<u>ESTIMATED COST</u>
<u>Air and Space Building</u>		
MAJOR CAPITAL RENEWAL		
Master Facility Plan		
Design		<u>150,000</u>
SUBTOTAL		\$150,000
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
Parking Garage Repainting	General	400,000
Skylight & Window Replacement	Facade	9,000,000
Fire Protection Master Plan Implementation	Fire	50,000
Garage Level Elevator Lobby & Access Control	Access	140,000
Electrical Panel Expansion	Utility	<u>600,000</u>
SUBTOTAL		\$10,190,000
TOTAL FOR FACILITY		\$10,340,000
<u>American Art and Portrait Gallery Building</u>		
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
Stone Repair	Facade	<u>150,000</u>
TOTAL FOR FACILITY		\$150,000
<u>American History Building</u>		
MAJOR CAPITAL RENEWAL		
Master Coordination Plan, Phase IVb		
Security Modifications		200,000
Relocation		400,000
Basement HVAC Improvements		
Design		140,000
Relocation		<u>100,000</u>
SUBTOTAL		\$840,000
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
Miscellaneous Wall Repairs	General	200,000
Miscellaneous Facade Repairs	Facade	450,000
Exterior Doors Repair/Replacement	Access	100,000
West Side Rest Room Facility Repair	Utility	100,000
Toilet Room Drainage Repair	Utility	30,000
Carmichael Auditorium Lighting Upgrade	Utility	300,000
Trash Compactor Study	AdvPlan	<u>25,000</u>
SUBTOTAL		\$1,205,000
TOTAL FOR FACILITY		\$2,045,000

<u>FACILITY, ACCOUNT, AND PROJECT TITLE</u>	<u>SUBCATEGORY</u>	<u>ESTIMATED COST</u>
<u>American Indian Museum, Research Branch</u>		
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
General Repairs	General	50,000
Driveway & Parking Lot Repairs	Facade	15,000
Fire Protection Modifications	Fire	150,000
Elevator Inspection & Repair	Access	<u>100,000</u>
TOTAL FOR FACILITY		\$315,000
<u>Anacostia Building</u>		
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
General Repairs	General	50,000
Painting of Metal Walls	Facade	15,000
Replacement of Glass & Frames	Facade	15,000
Second Floor Handicapped Toilet Repair	Access	10,000
Stairwell Heating Repair	Utility	<u>10,000</u>
TOTAL FOR FACILITY		\$100,000
<u>Arts and Industries Building</u>		
MAJOR CAPITAL RENEWAL		
HVAC & Electrical Improvements Master Plan		
Design		360,000
Relocation		<u>300,000</u>
SUBTOTAL		\$660,000
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
Roof & Skylight Repairs	Facade	330,000
Window Repairs	Facade	<u>300,000</u>
SUBTOTAL		\$630,000
TOTAL FOR FACILITY		\$1,290,000
<u>Cooper-Hewitt Museum</u>		
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
General Repairs	General	75,000
Window & Door Repairs, McAlpin-Miller/Fox	Facade	280,000
Conservatory Glass Leak Repairs	Facade	300,000
Sprinkler System, McAlpin-Miller/Fox House	Fire	200,000
Handicapped Access, Phase II	Access	50,000
Building Core, McAlpin-Miller/Fox House	Access	1,000,000
Asbestos Removal, McAlpin-Miller/Fox House	Access	200,000
Fox House Security	Access	50,000
Perimeter Security	Access	50,000
Energy Study, Carnegie Mansion	Utility	500,000
Utility Repairs, McAlpin-Miller/Fox House	Utility	<u>850,000</u>
TOTAL FOR FACILITY		\$3,555,000

<u>FACILITY, ACCOUNT, AND PROJECT TITLE</u>	<u>SUBCATEGORY</u>	<u>ESTIMATED COST</u>
<u>Freer Gallery Building</u>		
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
Attic Level Repairs	General	175,000
Peacock Room Improvements	Access	<u>40,000</u>
TOTAL FOR FACILITY		\$215,000
<u>Hirshhorn Building</u>		
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
No projects planned this year		
<u>Museum Support Center</u>		
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
Miscellaneous Road Repairs	General	125,000
Fire Improvements in Storage Pods	Fire	<u>100,000</u>
TOTAL FOR FACILITY		\$225,000
<u>Natural History Building</u>		
MAJOR CAPITAL RENEWAL		
Master Plan Improvements		2,500,000
Design		500,000
Relocation		<u>500,000</u>
SUBTOTAL		\$3,500,000
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
Public Area Restoration	General	200,000
Roof Repair	Facade	500,000
Baird Auditorium Lift Installation	Access	35,000
Public/Staff Separation	Access	100,000
North Lobby Rest Room Improvements	Utility	<u>200,000</u>
SUBTOTAL		\$1,035,000
TOTAL FOR FACILITY		\$4,535,000
<u>Quadrangle Complex</u>		
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
Handicapped Access to Stage Installation	Access	30,000
Freight Elevator Repair Study	AdvPlan	<u>30,000</u>
TOTAL FOR FACILITY		\$60,000
<u>Renwick Gallery Building</u>		
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
Electrical Feeder Upgrade	Utility	<u>300,000</u>
TOTAL FOR FACILITY		\$300,000

<u>FACILITY, ACCOUNT, AND PROJECT TITLE</u>	<u>SUBCATEGORY</u>	<u>ESTIMATED COST</u>
<u>Silver Hill Facility</u>		
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
General Repairs, All Buildings and Grounds	General	200,000
Road Repairs	General	300,000
Roof Replacement & Skylight Covering	Facade	<u>400,000</u>
TOTAL FOR FACILITY		\$900,000
<u>Smithsonian Astrophysical Observatory</u>		
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
Road Repairs and Improvements	General	750,000
General Repairs, Whipple	General	70,000
General Repairs, Oak Ridge	General	30,000
General Repairs, Cambridge	General	30,000
Revegetation, Whipple	General	30,000
Replacement of 60-inch Dome, Whipple	Facade	150,000
Security System Expansion, Whipple	Access	60,000
Computer Center UPS, Cambridge	Utility	<u>110,000</u>
TOTAL FOR FACILITY		\$1,230,000
<u>Smithsonian Environmental Research Center</u>		
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
General Repairs	General	100,000
Road Repairs & Paving	General	300,000
Renovation of Old Dominion Building	General	1,200,000
Replacement of Boat Ramp	General	135,000
Replacement of Dock Storage Shed	General	60,000
Rest Room Modifications, Visitors' Center	Access	30,000
Boiler Replacement	Utility	<u>150,000</u>
TOTAL FOR FACILITY		\$1,975,000
<u>Smithsonian Institution Building</u>		
MAJOR CAPITAL RENEWAL		
Master Coordination Plan		
Design		<u>400,000</u>
SUBTOTAL		\$400,000
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
Facade Restoration (Masonry)	Facade	50,000
Steam Station Redesign & Replacement	Utility	300,000
Communications Raceway System Installation	Utility	<u>300,000</u>
SUBTOTAL		\$650,000
TOTAL FOR FACILITY		\$1,050,000

<u>FACILITY, ACCOUNT, AND PROJECT TITLE</u>	<u>SUBCATEGORY</u>	<u>ESTIMATED COST</u>
<u>Smithsonian Tropical Research Institute</u>		
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
General Repairs	General	150,000
Painting of Structures	Facade	35,000
Underwater Electrical Cable Replacement BCI	Utility	<u>350,000</u>
TOTAL FOR FACILITY		\$535,000
<u>Miscellaneous Locations</u>		
REPAIRS, RESTORATION, AND CODE COMPLIANCE		
Grounds, Sidewalk, and Parking Lot Repairs	General	300,000
Emergency Repairs	General	200,000
Mall Master Plan Implementation	General	300,000
General Facade Renovations	Facade	200,000
East Garden Paving & Wall Repair	Facade	60,000
Lightning Protection, Various Sites	Fire	420,000
Asbestos Abatement	Access	2,000,000
Security Lighting, Mall Buildings	Access	500,000
Institution-Wide Accessibility Implementation	Access	800,000
Underground Storage Tank Removal	Access	700,000
HVAC Controls Upgrade	Utility	200,000
Advanced Planning and Design	AdvPlan	<u>2,000,000</u>
TOTAL MISCELLANEOUS		\$7,680,000
TOTAL REQUEST, REPAIR AND RESTORATION OF BUILDINGS		<u>\$36,500,000</u>

CONSTRUCTION

1991 Appropriation.....	\$15,407,000
P.L. 99-177, The Balanced Budget and Emergency Deficit Control Act of 1985 (as amended)....	\$15,406,800
1992 Estimate.....	\$25,100,000
1993 Estimate.....	\$79,550,000

The FY 1993 appropriation request for Construction represents an investment in the Institution's long-range program goals. The Institution has growing requirements for physical plant expansion and modification to support existing and future programs. The Smithsonian staff has assembled these needs into a comprehensive long-range capital improvement program that will phase solutions to these needs over the next decade. The FY 1993 Construction request will address the most urgent components of this program. Funding of these projects is essential to maintain vitality in the Institution's far-reaching programs of research, collections management, public exhibitions and education, and other services.

This year's Construction request is as follows:

MAJOR CONSTRUCTION

African-American Museum	\$ 450,000
Air and Space Museum Extension	8,000,000
General Post Office Building Renovation	38,300,000
National Museum of the American Indian	7,350,000
Natural History East Court Building	13,500,000
Smithsonian Tropical Research Institute	
Tivoli Maintenance Facility	1,950,000
Suitland Collections Research Center	<u>500,000</u>
Subtotal	\$70,050,000

CONSTRUCTION PLANNING	1,500,000
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MINOR CONSTRUCTION, ALTERATIONS, AND MODIFICATIONS	<u>8,000,000</u>
TOTAL	\$79,550,000

MAJOR CONSTRUCTION:

African American Museum (\$450,000) - In 1990, the Institution convened an advisory committee to guide the Smithsonian's study of the form and substance of a potential institution dedicated to the study and exposition of African American history, art, and culture. Interest in such a museum has been expressed since the early 1980s by members of Congress, as well as a number of influential citizens and museum associations. The Smithsonian's Board of Regents has indicated its support in principle for the committee's unanimous conclusion that there should be a freestanding African American museum at the Smithsonian and that the museum should be housed in the Arts and Industries Building.

In its report, the committee noted that "there currently exists no single institution devoted to African Americans which collects, analyzes, researches, and organizes exhibitions on a scale and definition comparable to those of the major museums devoted to other aspects of American life." The committee also cited the rapid disappearance of

African American cultural material due to lack of resources and trained professionals engaged in preservation. Museums have only recently acknowledged the need to collect African American material. Many small African American museums have inadequate storage and conservation facilities. More established museums are just beginning to identify and properly conserve African American material in their collections.

As currently envisioned by the Institution, the African American Museum would be dedicated to the collection, preservation, research, and exhibition of African American historical and cultural material reflecting the breadth and depth of the experiences of persons of African descent living in the United States. The Museum would embrace broad perspectives, such as exploring diversity within the African American experience and the historical and cultural roots of racial perceptions, that would contribute to the accurate understanding of the total American experience. Through research, exhibitions, and formal and informal educational programming, the Museum would play a strong role in public education. The Museum would provide a central focus to collaborative collecting efforts across the country through a shared collections data base to document museum collections and make them more accessible to scholars and the public.

Staff is currently studying a number of programmatic issues related to establishment of a new museum, including identifying core collections. The Institution requests \$450,000 in FY 1993 to support this museum programming and to develop associated facilities requirements and preliminary cost estimates. The funding will allow the Smithsonian to define short- and long-term objectives, study population and visitation potentials, identify space requirements (both on and off the Mall) in terms of square footages, adjacencies, and general and special needs. The Institution will use this information to establish cost criteria and develop schedules for implementation in conjunction with the renovation of the utility systems in the Arts and Industries Building. The requested funding will allow the Institution to begin to give shape and form to the vision of the African American Museum.

Air and Space Museum Extension (\$8,000,000) - The National Museum Amendments Act of 1965 directs the National Air and Space Museum to "collect, preserve, and display aeronautical and space-flight equipment of historical interest and significance." In keeping with the Smithsonian's general mandate, the Museum conducts collections-related research and interprets the significance of new scientific discoveries and successive waves of technological advances associated with aviation and space flight.

The National Air and Space Museum (NASM) currently faces a critical shortage of facilities that threatens to cripple its basic collecting program. In the 42 years of its existence, the Museum has brought together the most significant collection of aircraft and spacecraft in the world. The Museum exhibits and stores its collection of aircraft and spacecraft and related artifacts in the Mall building and at the Paul E. Garber Facility in Suitland, Maryland. These buildings are filled to capacity, despite deliberate steps to limit the growth of the collection. A number of significant items can now be accommodated only outdoors, where they are constantly subjected to the highly destructive effects of precipitation and other environmental elements. The enormous size of contemporary aircraft and spacecraft also currently prevents the Museum from adding important artifacts to its collections. A number of aircraft that belong in the collections cannot be stored at either site because it is physically impossible to transport them from the airfield to which they are delivered without severing the wings from the fuselage. The Museum's extensive program of lending aircraft and spacecraft to other museums in the United States and abroad has helped relieve this problem, but the

Institution risks interrupting the continuity of its collections if appropriate space for storage of significant larger artifacts is not found.

The advanced age and deteriorated condition of the Suitland buildings jeopardizes preservation of the Museum's existing collection. The Garber Facility includes approximately 23 temporary metal structures, many of which date from the late 1940s and early 1950s. A recent building survey completed as part of the Suitland Master Plan estimated the future lifespan of most of these buildings as between ten and 15 years. Furthermore, the buildings do not provide the controlled climatic conditions necessary for preservation of most museum artifacts.

In addition to storage problems, artifact size has dictated exhibit limitations as well. The Museum cannot display, even in modest spaces open to the public, a number of significant aircraft and spacecraft now in its collections because they are too big and too heavy for the Mall building. These include the Boeing 367-80 (prototype for the 707), Vought XF8U Crusader, Lockheed Superconstellation, Boeing Flying Fortress, Sikorsky S-43 Flying Boat, the B-29 Enola Gay, the space shuttle Enterprise, and the newly acquired SR-71 BlackBird. The need to make these aircraft and spacecraft available to visitors in order to display the significance of advances in aerospace technology is a critical requirement for the Museum.

An Air and Space Museum Extension at or near an airport in the Washington, D.C., area will meet the physical requirements for restoration and storage of the Museum's large-scale artifacts. Close proximity to the Museum on the Mall will maintain the coherence of the collections and related exhibitions, research, and education programs and will preclude the redundancy of resources that would be required at a more distant site. Although primarily a collections facility, some display/storage space will enable visitors to view aircraft and spacecraft and understand the social, environmental, and scientific changes they have brought about.

In FY 1990, the Smithsonian selected a site at the Dulles International Airport for the proposed NASM Extension. The selection was based, in part, on a comparison of logistical and physical characteristics of potential sites located near Washington, D.C., including:

- proximity to an active runway;
- flexibility in building configuration and space for future expansion;
- adequacy of existing and projected transportation networks for visitor access and artifact movement;
- compatibility with and noninterference from existing airport operations and absence of vibration, noise, and fumes (from aircraft and vehicular traffic);
- potential numbers of visitors that might be attracted to the site;
- geological configuration and subsurface conditions;
- availability of utilities and vital support services, such as police and fire departments.

Another determining factor was the level of State and local support for site and access improvements and assistance in financing the construction of the Extension. The offer from the Commonwealth of Virginia includes site work and utilities, the value of which the Smithsonian estimates at \$40 million; up to \$6 million in general funds to be matched by \$6 million from local government and private corporations for construction of the building; a \$3 million interest-free loan for planning and design; and major highway improvements to facilitate public access to the site. Virginia's support is given with the understanding that the Extension will include public access and constitute an educational resource.

Of the \$162 million total estimated cost for the Extension, approximately two-thirds (\$107 million) will come from Federal appropriations and the balance (\$55 million) from fundraising and State support. Congress is currently considering legislation authorizing the Institution to plan and design the Air and Space Museum Extension, with appropriations of \$9,000,000 for design. Pending Congressional approval, the Institution will use funds appropriated in the Construction Planning account for further planning of the Extension. In FY 1993, the Institution requests \$8,000,000 to design the Extension. The Commonwealth of Virginia will supplement this amount with \$1,000,000 to complete the design. While not reflecting the anticipated 2:1 split of appropriated versus nonappropriated funding (including site work performed by Virginia), this plan for completion of design with largely appropriated funds will allow the Institution to initiate the fund-raising campaign to secure the balance of construction funding. The Institution will match appropriated funds for the complete project 2:1 with nonappropriated funding.

General Post Office Building (\$38,300,000) - The General Post Office Building is bounded by 7th, 8th, E, and F Streets in Northwest Washington, D.C. Its original wing (on the E Street side of the building) is the work of America's first native-born professional architect, Robert Mills of South Carolina. Mills also designed the Patent Office Building, the original plan for the Washington Monument, and the Treasury Building. The General Post Office Building is the fifth oldest public building in Washington and has never been renovated or restored. The building's fine architectural detailing, however, is for the most part still intact and unchanged from the original and thus warrants full restoration. The Pennsylvania Avenue Development Corporation, within whose area the building lies, supports the timely, well-executed renovation of this significant building, as do the Government of the District of Columbia and the National Capital Planning Commission.

On October 19, 1984, the President signed Public Law 98-523 authorizing transfer of the General Post Office Building from the General Services Administration (GSA) to the Smithsonian Institution without reimbursement. The legislation also authorized appropriations of up to \$40 million to the Institution for the renovation of the building. GSA is currently using the building for temporary housing of a number of Federal agencies. Custodianship of the building will transfer to the Smithsonian when renovation funding is available.

The Institution proposes to use the General Post Office Building to support the research and collections activities of the three principal Smithsonian bureaus directly engaged in the field of American art--the National Museum of American Art, the National Portrait Gallery, and the Archives of American Art. Each of these units has a serious need for additional space for archives, study and storage of collections, offices for existing staff and visiting researchers, and public use. The building's architectural configuration will limit the extent of climate-controlled areas that can serve for exhibitions or

collections storage. However, the Institution will renovate the subbasement under the courtyard to provide a combination of collections storage space and non-climate-controlled general storage. Restoration of the Dead Letter Office on the north end of the second floor will provide gallery space for the two museums. The courtyard structure, once renovated, will supplement public space. The Institution will use the remainder of the building to house the Archives of American Art and for nonpublic functions of the National Museum of American Art and National Portrait Gallery, as well as to meet office-space requirements of other Smithsonian organizations.

The move of certain nonpublic functions to the General Post Office Building will allow the Institution to convert additional space in the Patent Office Building to public use. In addition, the relocation of the Archives of American Art to the General Post Office Building will allow for expansion of the presently cramped art library in the Patent Office Building.

Together the Patent Office Building and the General Post Office Building will create an unparalleled complex at Gallery Place devoted to advancing the understanding of the unique contribution made to the world by American arts and culture and underscoring the differences and similarities between the artistic traditions of America's diverse citizenry and those of other nations. At the same time, the Institution will fulfill its obligation toward the long-term preservation of this historic landmark.

Studies undertaken by a number of architectural and engineering firms, including a January 1991 study, indicate that the General Post Office Building can be used most effectively for the purposes described. However, extensive repairs and restoration, as well as building modifications, are needed to make the building ready for continued use.

Most of the building systems are in very poor condition. Asbestos insulation encases exposed plumbing in almost every space. Because the drinking water is unsafe, occupants must use bottled water. Other conditions include:

- an overloaded electrical system that is in poor condition and a potential fire hazard;
- an unreliable steam heating system with corroded and heat-leaking exchanger tanks;
- deteriorated pumps and other mechanical equipment;
- window air conditioners, in various states of repair;
- very old, unreliable central air conditioning units that only serve limited areas of the building.

The building has no fire safety systems, such as water sprinklers and smoke detectors, and the existing fire alarm system consists of old, unreliable pull stations. One of the building's two small passenger elevators is automatic and reportedly has several deficiencies, and the other requires an operator. Both are very old and reportedly subject to frequent breakdowns. Previous roof repairs did not replace the rain gutters and interior downspouts, and these are subject to intermittent failure, causing leaks in the building. Window frames have dry rot, and the poor condition of the exterior stone facade exacerbates interior water intrusion problems. The basement area of the building is

substantially uncovered earth, admitting moisture and rodents. The interior courtyard, a paved parking area over a wooden structure, may be structurally unsound. Major restoration is necessary to arrest deterioration and make the building safe for continued occupancy.

The Institution proposes a comprehensive program to preserve the historic nature of the building, to bring it up to code, and to adapt it for Smithsonian use. The planned work includes:

- repairing the stone facade;
- replacing rain gutters and interior downspouts and repairing interior water intrusion damage;
- restoring all original interior and exterior architectural finishes;
- restoring or replacing all windows;
- repairing all electrical and plumbing systems;
- reinforcing floors;
- providing new insulation, a vapor barrier where necessary, and a heating and air conditioning system with industrial-quality controls;
- installing smoke detection and sprinkler systems along with security equipment;
- sealing and finishing the dirt areas of the basement to contemporary code standards;
- rebuilding and replacing elevators, installing escalators, and other modifications necessary to ensure accessibility for people with disabilities;
- providing a new delivery and loading dock area.

The proposed renovations will preserve the building for future generations and will provide an energy-efficient, safe, and secure environment for collections, staff, and visitors. Congress authorized \$40 million for building renovation in 1984. The Institution will use the \$1,700,000 anticipated in FY 1992 for the initial design phase, which will provide a detailed cost estimate for renovation of the building. The Smithsonian requests \$38,300,000 in FY 1993 to complete the design and the required renovations.

Postponement of this project will increase the risk of irreparable damage and further deterioration of the building. Moreover, each year additional deterioration increases the cost of renovation and repairs. Inflation contributes to higher costs as well. Failure to make the most urgent improvements will prevent the Smithsonian from making full use of the building. Under current plans for beginning the design phase in FY 1992 and initiating construction in FY 1993, it will be 1995 before the Smithsonian can complete the renovation. Continued delay will adversely affect the Institution's ability to conduct core programs in American art (presently housed in inadequate facilities in the Patent Office Building) for the benefit of the public and future generations of citizens concerned with

America's diverse culture. The need to provide these units with sufficient space is critical. The reuse of space in the Patent Office Building depends on the timing and sequencing of events in the General Post Office Building. Larger programmatic issues affecting the future direction of American art at the Smithsonian depend on the resolution of the General Post Office facility.

National Museum of the American Indian (\$7,350,000) - On November 28, 1989, President George Bush approved Public Law 101-185 establishing the National Museum of the American Indian. The basis of the new museum is the Heye Foundation Collection, which includes more than one million Native-American objects and artifacts from all parts of the Western Hemisphere. The New York State Supreme Court approved the transfer of the Foundation's collection to the care and custody of the Smithsonian, effective June 24, 1990. The agreement between the Smithsonian Institution and the Museum of the American Indian, Heye Foundation, signed in May 1989, also provides for transfer of the Foundation's endowment and most of its other property, including an 86,000-item archives.

The creation of this new national Museum is the culmination of almost a decade of negotiations among the Foundation, the City and the State of New York, and, more recently, the Smithsonian Institution. When the new Museum opens to the public at the turn of the century, it will stand as a tribute to the many and varied contributions of American Indians, Eskimos, Aleuts, native Hawaiians, and other Native-American cultures. In Congressional testimony describing the prospective of the Museum, Secretary Robert McC. Adams said, "It is likely to alter beyond all expectation public understanding of American Indian people."

Public Law 101-185 authorizes the Institution to provide facilities for the Museum in three locations:

- a major museum building to be constructed on the Mall in Washington, D.C., on land reserved for Smithsonian use by Congress in 1975;
- an exhibition and education facility located in a portion of the United States Custom House in lower Manhattan, to be known as the George Gustav Heye Center;
- a collections storage, conservation, and research facility on the site of the Museum Support Center in Suitland, Maryland.

The Institution anticipates four major sources of funding for construction of these facilities: New York City, the State of New York, Federal appropriations, and private donations. The Institution received an appropriation in FY 1990 for programming and planning all three facilities and for design of the Custom House conversion. For FY 1991, the Smithsonian received \$7,391,000 and anticipates \$2,400,000 in FY 1992 to prepare the Custom House space, begin design of the Suitland building, continue planning for the Mall museum, and complete planning and programming for the new Museum as a whole. The Smithsonian requests a total of \$7,350,000 for FY 1993 to continue development of these facilities. The details of this request are as follows:

The Museum on the Mall (\$6,350,000) - The Institution will construct a new building on the National Mall near the foot of Capitol Hill, adjacent to the world's most frequently visited museums. Congress reserved the last remaining construction site on the Mall for the Smithsonian in 1975. The location will provide excellent exposure for Native-American artifacts and related museum activities centered on Native-American culture. The

Institution expects that this facility will house permanent and changing exhibitions, reference and collection areas, an auditorium and theater, museum shops, public education facilities, and space for research and other programs.

The Institution projects the total cost of construction of the Mall building to be approximately \$106 million, assuming a construction start in the mid-1990s. The Smithsonian plans to fund two-thirds of the cost from Federal sources and expects that the balance will result from a national fund-raising campaign. Initial planning efforts will define the program requirements and refine the construction and equipment estimate, as well as relevant logistical and operating requirements and costs. The Museum of the American Indian is currently holding a series of consultations with Native-American communities to define the programs of the new Museum, as well as generate ideas about the physical characteristics of the building. With \$720,000 and \$430,000 received in FY 1990 and FY 1991, respectively, the Institution will complete overall programming and planning for the new Museum, as well as detailed planning for the Mall museum building. The detailed planning will incorporate the considerations identified by Native-American groups. The Institution anticipates \$1,000,000 in FY 1992 to begin conceptual design of the Mall building. The \$6,350,000 requested in FY 1993 will complete the design. The Smithsonian expects the design effort to take up to two years, with construction scheduled to begin in FY 1996. The current schedule calls for completion of the building in FY 1999 and its public opening in the year 2000.

The United States Custom House, New York City - The Institution will convert space in the United States Custom House in lower Manhattan to house an extension of the National Museum of the American Indian. The New York facility, to be named in memory of George Gustav Heye, will contain space for exhibitions, education, and other public-service programs. The Institution projects the cost of preparing portions of the United States Custom House for museum use to be approximately \$24 million. The State of New York and New York City have each pledged to contribute one-third of the cost, or up to \$8 million each, toward construction of the George Gustav Heye Center. The Institution received \$600,000 in FY 1990 for planning and design of the Custom House facility and \$6,000,000 in FY 1991 for construction. The \$1,400,000 anticipated in FY 1992 will complete construction of the Center, preserving the 2:1 match of funds provided by New York City and the State to those obtained by the Institution. Additional funding of \$1,700,000 anticipated in the FY 1992 Salaries and Expenses account will equip and furnish the building. The current schedule calls for opening the Center to the public in 1993.

The Suitland Building (\$1,000,000) - The Institution plans to construct a facility adjacent to the Museum Support Center to provide proper housing and study for the former Heye Foundation Collection. This building will locate this extensive collection of Indian artifacts near the Indian artifacts from the National Museum of Natural History, thus consolidating resources for conservation, preservation, and collections-related research activities. The Institution currently expects the storage facility to cost approximately \$44 million to design, build, and equip, based on a construction start in 1994. The Smithsonian will use \$300,000 appropriated in FY 1990 for preliminary planning purposes. This planning will identify a specific site and building configuration, provide details such as geotechnical data, and help refine construction cost estimates and schedules. The amount of \$961,000 appropriated in FY 1991 will permit initial design of the building. The Institution requests \$1,000,000 in FY 1993 to complete design. The Smithsonian will request funding for constructing and equipping the building in future-year requests. Upon completion of the building in FY 1997, the Institution will relocate the Heye Foundation Collection from its New York storage site.

Natural History East Court Building (\$13,500,000) - The Natural History Building on the Mall houses more than 1,200 employees of the Smithsonian Institution and several Government agencies engaged in related biological research, including 159 scientists and their associated staff. Each year these individuals, along with more than 2,000 visiting scientists, conduct basic collections-related research in a broad range of subjects critically important in advancing scientific knowledge related to humankind and the environment. In addition to the large force of scientific staff and other personnel, the building also houses substantial collections, numbering well over 120 million biological specimens and anthropological artifacts, and 30 public exhibition halls with associated educational and outreach activities. A number of other Smithsonian organizations also occupy the building, including the Smithsonian Institution Libraries and the Office of Plant Services.

The National Museum of Natural History (NMNH) faces two significant challenges regarding space for the immediate future: accommodating a total building renovation of the heating, ventilating, and air conditioning (HVAC) system; and relieving severe overcrowding. The Museum proposes to meet these two challenges by constructing a building inside the Natural History Building's East Courtyard.

In the immediate years ahead, the Museum must deal with a complete renovation of the Natural History Building's aging HVAC system. This project, funded from the Repair and Restoration of Buildings account, will also include asbestos removal, window replacement or insulation throughout the building, and some work on fire protection and security systems. This project will affect all operations of the Museum during the seven to ten years it will take to complete. Large portions of the collections will be moved back and forth. Entire exhibition spaces will be closed to the public and later reopened. Most staff members and virtually every activity will have to relocate temporarily. Given the extent and duration of the HVAC renovation, the Institution seeks to minimize disruption, particularly of the Museum's scientific productivity and public programs. The decade of the 1990s is crucial for the Museum's scientific enterprise because of the growing concerns about the loss of biodiversity and the issues relating to global environmental change.

The second major challenge is severe overcrowding of staff and activities. During the past 25 years, the Museum has responded to challenges facing the scientific community at large, such as the rapid destruction of the diversity of life in the tropics and the need to address global change. To meet these challenges, the Museum has increased its efforts and enlarged both its programs and staff. Authorized workyears have increased from 331 in 1972 to 591 in 1991, a net increase of 260 full-time permanent employees. As a consequence, the Museum has divided and subdivided offices, laboratories, and collection spaces and closed four large exhibit halls indefinitely to accommodate staff space needs. NMNH is using two of these four halls as staging areas to prepare collections for transfer to the Museum Support Center (MSC) in Suitland. Even when the Museum completes collections transfer, however, there will not be enough space available to accommodate all staff functions in the Natural History Building or to house under adequate conditions the Museum's diverse programs.

To meet its challenges regarding space, the Museum considered several alternatives. To accommodate temporary relocations for the HVAC renovation, the Museum must find substantial temporary space, either off site or on site. Off-site leased space would not provide adequate conditions and facilities without being prohibitively expensive in direct costs and in the toll the move would take on the academic and public life of the Museum.

On-site relocation, requiring 125,000 square feet of staging space under the optimum seven-year plan for renovating the HVAC system, would close down a major portion of the public exhibition space and have a strong negative impact on the visiting public.

After weighing its options, the Museum settled on the East Court Building proposal to resolve both space problems. The new in-fill building will interconnect directly with the existing building and ultimately become an integral part of the Natural History Building.

During the HVAC renovation project, the East Court Building will add approximately 80,000 net square feet to the Natural History Building. This space will serve both as "swing space" for temporary relocation of offices, laboratories, and collections and as space for the permanent relocation of functions now housed elsewhere in the Natural History Building. The space vacated by the permanent relocation of activities to the East Court Building will also become "swing space" for the HVAC renovation project. The result is 80,000 net square feet available within the building for "swing space" during the renovation project. Although this amount falls short of the estimated need, the Museum can manage the necessary relocations by temporarily compressing some of the activities and collections within the Natural History Building and by using a limited amount of exhibition space for the duration. At the end of the HVAC construction period, the Museum will have 80,000 square feet of permanent space to accommodate currently overcrowded research laboratories, offices, collection areas, and public exhibit, education, and other outreach and Institution support activities.

The estimated cost of design and construction of the East Court Building is \$25 million. This estimate includes the cost of relocating the greenhouse, osteology preparation laboratory, building trades shops, and hazardous waste storage located in buildings presently in the East Courtyard. The estimate for furnishing and equipping costs is an additional \$5 million. In 1990, Congress enacted Public Law 101-455 authorizing the Institution to construct the new building and authorizing appropriations totaling \$30 million.

The Institution completed the necessary planning for the new building in early FY 1991, using Construction Planning funds, and is using \$1,500,000 appropriated in FY 1991 for design. The current schedule calls for design completion in late 1992. The \$15,000,000 anticipated in FY 1992 will allow award of the construction contract in fall 1992 to meet the critical path schedule for the HVAC renovation project. Although this amount will provide more than one-half of the expected contract cost of \$23,500,000, as required in government Contracting regulations, appropriation of the remainder of the construction funds (\$8,500,000) is essential to complete the building. In 1993, the Institution requests the remaining amount of construction funds to fully fund the contract, as well as \$5,000,000 to equip the building. Funding of the East Court Building will allow the Institution to proceed with its plans to renovate the Natural History Building and at the same time provide valuable permanent space for the Museum's programs.

Smithsonian Tropical Research Institute (\$1,950,000) - The Smithsonian Tropical Research Institute (STRI) is the world's premier center for basic research in tropical biology. During the past decade, STRI has implemented a Master Facilities Plan to replace or upgrade its old facilities, some dating from the turn of the century. Many of these buildings were not constructed for research purposes and are inefficient and, in some instances, unsafe. The upgrading of these facilities is a prerequisite for STRI to fulfill its responsibilities to the Nation and the world in investigating and explaining the

complexities of the tropics. The knowledge gained will guide development of programs to retard rapid destruction of the tropics.

Research at STRI is unique because of STRI's accessibility to a variety of tropical habitats and its ability to examine long-term environmental impacts on animal and plant populations on land. Its two-ocean capability also allows for interesting evolutionary studies in a marine environment.

Through consistent support for the STRI Facilities Master Plan, Congress has recognized the importance of STRI's programs and the need for improvement in its facilities. In 1986, the Smithsonian received Congressional authorization under Public Law 99-423 to plan and construct additional research and dormitory facilities at various STRI sites in Panama. Subsequent appropriations have allowed the Institution to begin construction of several of these new facilities. The Earl S. Tupper Laboratory and Conference Center is now complete, and new laboratory facilities on Barro Colorado Island are under construction.

The final major project outlined in the Facilities Master Plan is construction of a new maintenance facility at the Tivoli site in Panama City. With the construction of new facilities, STRI has more than doubled its previous square footage. A new, modern maintenance facility will allow continuation of adequate levels of maintenance support for STRI's physical plant and its fleet of vehicles and boats.

The current maintenance shop, which serves all STRI sites throughout the Isthmus, is located on the ground floor of Building 359 on Naos Island, Fort Amador. Marine research laboratories and offices are located directly above the shop. High noise levels, vibration, dust, and traffic associated with normal shop operations are disruptive to sensitive experiments. Occasional extra loads on the electrical power in the shop have caused computer malfunctions in the laboratories upstairs. The distance from STRI's main center of operations, at Tivoli, and from commercial suppliers is also a significant obstacle. STRI must transport shop personnel, supplies, and materials to the site daily. The remote location delays response to emergency situations, especially during nonduty hours, as public transportation is not available. In addition, the space now occupied by the maintenance shop is needed as laboratory space for the expanded Marine Sciences Research Program, including the recently approved program in molecular biology. Since space adjacent to the ocean is limited, this space is critical to the continued success of that program.

The Institution requests \$1,950,000 in FY 1993 to construct a new maintenance facility at a site near the newly completed Tupper Laboratory and Conference Center. Because of its central location and proximity to suppliers, the Tivoli site is more appropriate for this operation than the current shop at Naos Island. Modern shop facilities will provide much-needed capability to service STRI's expanded physical plant and its research vehicles and boats.

Suitland Collections Research Center (\$500,000) - A vital component of the Smithsonian's mission is collecting, studying, and preserving significant artifacts that document human and natural history and reflect human achievements in the arts and sciences. The Institution has, for a number of years, experienced a severe shortage of space in which to store, document, research, and conserve its collections.

The Museum Support Center (MSC), which opened in 1983, and a proposed Extension to the National Air and Space Museum at Dulles International Airport will provide space to solve the most immediate storage needs for natural history and aerospace collections. However, the Institution urgently needs space to ensure the continued preservation of the collections and the vitality of the collection-based research and collections management programs of other Smithsonian museums and bureaus. Present conditions endanger long-term preservation of the collections, limit access by research staff and scholars, retard dissemination of knowledge to the public, and inhibit the orderly acquisition of significant additions to the collections. The Institution has made concerted efforts to limit the growth of collections by carefully screening offers of donation, deaccessioning marginal items collected in the past, and encouraging extensive loan programs. Despite these efforts, the Smithsonian's collections have, of necessity, continued to expand.

The Institution has documented its immediate and long-term needs for additional space to house growing collections in history and art, as well as important archival and library collections that are currently inadequately housed and conserved. Based on the initial phase of the Suitland Master Plan, the Institution will require approximately 2.8 million square feet of new collections management, conservation, and research support space over the next two decades.

The space problem is exacerbated by the age and condition of the present storage buildings at the Smithsonian's facility in Suitland, Maryland. Among the structures at Suitland are temporary metal buildings that provide approximately 115,000 square feet of storage space for the National Museum of American History (NMAH). Most of these buildings have a remaining life expectancy of less than ten to 15 years. Since half of NMAH's collections, exclusive of stamps and coins, reside there, it is essential to have facilities ready in the next decade to ensure that the National Collections have proper housing. Other Smithsonian museums, as well as archival and library units, are also experiencing serious shortages of appropriate collections storage space. Space in Mall museums is already severely overcrowded, and several museums and bureaus have moved collections into leased space in off-Mall locations to avoid damage and deterioration of artifacts from excessive compression. Many of these locations, however, including most of the Suitland buildings, do not provide the environmental conditions necessary for long-term preservation of collections.

A study completed in 1990 determined that buildable land is available on the Smithsonian's Museum Support Center property in Suitland, to accommodate the identified requirements. Space will also be available on adjacent land, once the Paul E. Garber Facility is dismantled, which would provide three to five million additional square feet of space for future growth of the National Collections and support services well into the next century. Present experience with MSC indicates that the Suitland properties are the logical site for development of a center for research/study collections.

The Smithsonian plans to sequence construction of a new Collections Research Center on the MSC site at Suitland over the next ten to 20 years. The Institution will contract in late 1991 for the final phase of the Suitland Master Plan, using Construction Planning funds. The study will determine the appropriate placement of structures, roads, infrastructure, and landscaping that will form an integrated complex of buildings and services to support management of and research in the National Collections. The location of bureaus and their functions on the site, as well as a construction-phasing plan and an environmental analysis, are also part of the study.

For FY 1993, the Institution requests \$500,000 to carry the planning process into the next stage. This planning will develop more specific program and facility requirements, refine estimates and schedules for construction, identify and analyze logistical issues, and establish operating-cost estimates for the initial structure or structures on the site. This detailed level of planning is essential and must precede a request for authorization and funding of construction.

CONSTRUCTION PLANNING (\$1,500,000) - An essential part of an effective facilities development program is the ability to assess requirements and make detailed long-range plans. A comprehensive long-range planning program identifies major issues affecting each expansion project, including program needs, spatial ideas, operating logistics and costs, and preliminary construction-cost estimates. The Institution initiated an improved long-range planning capability with funds received in FY 1989. Staff will continue planning future projects with Construction Planning funds received in FY 1990 and FY 1991.

For FY 1993, the Smithsonian requests \$1,500,000 to continue development of a comprehensive long-range capital improvement program. This planning process will result in better-defined plans and better cost estimates for future-year construction projects prior to authorization and budget requests. The Institution is currently considering a facilities expansion or improvement program that could reach nearly \$700 million in appropriated and nonappropriated funds over the next ten years. Annual resources of around \$1,500,000 will ensure continued feasibility studies, planning, and concepts upon which to base precise designs and more accurate cost estimates for construction of these and other projects. With these resources, the Institution will also establish operating and logistical support requirements and make required environmental assessments for critical capital improvement projects. This information will assist Smithsonian management decision making and provide the basis for review commission and Congressional approval.

The absence of planning resources means that estimates will be rough. Project requirements, such as space and configuration, construction and operational costs, and environmental and logistical factors will be no more than approximations. Without planning resources, capital-improvement planning also lacks coherence and unified direction. To avoid these problems, the Institution requests continued support for its long-range planning program.

MINOR CONSTRUCTION, ALTERATIONS, AND MODIFICATIONS - Projects in this category include:

- minor new construction (under \$1 million in estimated cost);
- alterations and modifications to buildings to meet programmatic objectives in the areas of research, collections management, exhibitions, and public services.

For FY 1993, the Smithsonian requests \$8,000,000 for the projects described below.

Air and Space Building (\$600,000) - The Institution requests funding for two projects at the Air and Space Building: modifications to the public address system and installation of a new rest room and coatroom facility in the basement.

The National Air and Space Museum uses a public address system to announce events in the Museum to the visiting public and as a backup system to notify building occupants of emergency situations. The existing system is inaudible in parts of the building and can

be operated only from the Security Office. The Smithsonian requests \$250,000 to update the system to improve the clarity of voice announcements and allow the Museum to make prerecorded and live announcements from several locations during emergencies, special events, and routine operations. A modified system will provide better public service to visitors and will contribute to increased safety of the public and staff in case of emergency.

The Smithsonian also requests \$350,000 in FY 1993 to install rest room facilities near the Educational Resource Center in the basement. Employees and visitors to the Center must now use the public rest rooms on the first floor, which are often very crowded during public hours. The project will also relocate the coatroom facility serving the Langley Theater to the same area. The relocation will allow the present coatcheck space to be used for advanced sales and reservations for the Theater and will improve the security of the Theater area. The requested modifications will improve the public services provided by the Educational Resource Center and the Langley Theater.

American Art and Portrait Gallery Building (\$140,000) - The Institution requests \$140,000 in FY 1993 to reconfigure approximately 1,800 square feet of space to provide a more efficient working environment for the staff of the Education Department at the National Portrait Gallery. The project will relieve overcrowding by installing modular furniture and upgrading electrical, telephone, and computer connections to improve staff productivity.

American History Building (\$550,000) - For FY 1993, the Institution requests funding for three projects for the National Museum of American History (NMAH): completion of conservation laboratory improvements, renovation and installation of compact shelving in the Numismatics storage area, and renovation of leased collections storage space at the Fullerton Industrial Park in Newington, Virginia.

For FY 1993, the Smithsonian requests \$100,000 to complete renovation of space in NMAH's basement to create a textile conservation laboratory. The Smithsonian began the conversion with \$500,000 received in FY 1990 and FY 1991. Completion of this final phase of the renovation will provide a laboratory for the conservation of costumes, textiles, and fragile organic materials. A laboratory meeting the requirements of these materials does not currently exist within the building. The Museum will convert several rooms in the basement now used for collections storage and offices. The renovation work will include relocating collections and installing sinks, cabinets, counters, fume hoods, and other equipment needed for conservation of these sensitive artifacts. Conversion of this space will enable the Museum to perform timely conservation treatments to a wider range of artifacts.

The vault now housing the Museum's valuable National Numismatics Collection is filled to capacity. The Institution requests \$250,000 in FY 1993 to modify an adjacent security vault, to be vacated by the move of the National Philatelic Collection to another location, and install compact shelving. The work will include architectural changes to connect the two storage areas and to accommodate the compact shelving. The Museum will request funds in a future year for relocation of the collection into the new compact storage equipment. Funding of this project will alleviate crowded conditions and increase storage capacity for this important collection.

The Smithsonian also requests \$200,000 to provide environmentally controlled and secure space for the storage of collections in space leased by NMAH. With funding

requested in the Salaries and Expenses section of this budget, the Museum will lease an additional 12,000 square feet of space in the Fullerton Industrial Park to house collections displaced during renovation and exhibit reinstallation projects in the Mall building and to expand permanent collections storage capacity. The requested funding will install heating, ventilating, and air conditioning (HVAC), fire detection and suppression, and security systems. The space is currently not climate controlled or alarmed. The work will also include demolition of existing offices to allow full use of the space. The renovation project will increase available space appropriate for storage of museum artifacts, and will allow renovation and exhibition projects to proceed in the Mall building.

American Indian Museum, Research Branch (\$160,000) - The Smithsonian requests funding for three projects at the Research Branch of the National Museum of the American Indian: renovation of the kitchen/lunchroom and installation of new rest rooms, paving of the parking lot, and site work and utilities to house temporary trailers on the site.

The Research Branch Building, in the Bronx, was built in 1925 and houses the curatorial offices, conservation facilities, laboratories, and the bulk of the former Heye Foundation Collection. The Foundation attached a four-story annex in 1960, and another addition will open in late 1991. The existing kitchen, lunchroom, and adjoining rest room date back to the original construction as the caretaker's apartment. These areas, which serve all staff as well as visiting researchers, guests, members of Indian tribes, and potential benefactors, are poorly arranged and very worn. The single rest room is actually a converted bathroom with shower and does not meet handicapped accessibility codes. These essential support areas will be severely inadequate to meet the needs of an expanded staff once the new addition is opened. Moreover, provision of appropriate food preparation and consumption areas is especially important, as there are no eating establishments in the immediate neighborhood. Refurbishment of the kitchen and lunchroom facilities will also make it easier for staff to maintain cleanliness and pest control, which are particularly important because of the close proximity of these facilities to the collection. The Smithsonian requests \$35,000 to renovate the kitchen and lunchroom and construct new rest room facilities. The work will include installation of new partitions and lighting, storage, built-in countertops and appliances, plumbing fixtures, and electrical outlets. New rest rooms will be completely accessible for disabled staff and visitors.

The Research Branch currently has a small paved parking area within the perimeter fence for use by staff and visiting researchers. With the proposed increase in staff working in the facility, the parking area will be unable to accommodate required parking. Staff parking outside the fence is inappropriate because of the high incidence of automobile theft and damage in the surrounding neighborhood. The Institution requests \$75,000 to pave a graveled area within the perimeter fence. In addition to expansion of parking, paving of the lot will improve drainage and reduce future maintenance costs.

Over the next several years, the National Museum of the American Indian must inspect, document, conserve, and pack the extensive collection of Native-American artifacts now stored in the Research Branch for relocation to the new storage facility to be constructed in Suitland, Maryland. With funding received in FY 1990 and FY 1991, the Institution will complete a permanent addition to the building to provide expanded space for these activities. This space will not be enough, however, for the full range of collections-care functions to be carried out by staff on site over the next few years. The Institution requests \$50,000 in FY 1993 to perform the necessary site work, such as grading and foundations, and installing utilities to accommodate the trailers. Funding of this project

will provide expanded work space for staging activities associated with current care of the collection and its eventual relocation to Suitland.

Anacostia Museum (\$600,000) - The Institution requests funding for two projects at the Anacostia Museum: expansion of office space and creation of storage space for the collections.

The Smithsonian requests \$400,000 to construct a mezzanine above the education offices to accommodate expanding staff and museum programs. Plans for the museum addition built in 1987 included provision for this mezzanine. The work will involve architectural, structural, electrical, and mechanical alterations. The project will also include installation of an elevator to provide access for persons with disabilities to the new mezzanine, as well as to other levels of the building. Funding of this request will provide needed expansion space for the Museum and extend disabled access throughout the building.

The Anacostia Museum recently began collecting artifacts representing the culture and experience of this unique neighborhood in the Nation's Capital. However, only a small space on the second floor of the existing building is available to store the collections. That area is now full, and the Institution requests \$200,000 to construct a small addition to the building for collections storage. The new space will be equipped with HVAC, fire protection, and security systems necessary to ensure secure storage in a climate-controlled environment. Funding of this project will provide appropriate safe and secure housing for the Museum's growing collections.

Arts and Industries Building (\$250,000) - The Arts and Industries Building (A&I) houses four major exhibition halls. It also houses essential program and administrative activities on the Mall, including those that require public access, such as Public Affairs, Museum Programs, and Elementary and Secondary Education. Other central support organizations located in this building include Protection Services, Information Resource Management, and Planning and Budget. There is an immediate and continuing need to renovate space to offer more functional work areas for current administrative and program requirements. The Institution has used funds provided through FY 1991 and will use similar funding expected in FY 1992 to continue renovation of space and acquisition of modular furniture to increase future flexibility. For FY 1993, the Smithsonian requests \$250,000 to modify an additional 4,000 - 5,000 square feet. Funding for this ongoing project will support the Institution's efforts to use efficiently the staff space in the Arts and Industries Building.

Freer Gallery Building (\$100,000) - At the Freer Gallery of Art, light from the outside windows causes damage to artwork exhibited or stored in the perimeter rooms. For FY 1993, the Institution requests \$100,000 to develop, fabricate, and install interior light control in 50 windows, which are located on the ground floor and gallery level of the building. Funding of this project will allow correction of this condition, which is detrimental to long-term preservation of the Gallery's collections.

Hirshhorn Building (\$160,000) - Since the opening of the Hirshhorn Museum and Sculpture Garden in 1974, the collection has grown to more than 13,000 pieces. Because only a small portion of the collection is on display at one time, the Museum must store the balance. A shortage of storage space now exists within the building, and off-site space is not currently available. Prints, paintings, sculptures, and library collections are stored in overcrowded conditions that subject them to the risk of permanent damage

and limit access by staff and scholars. The Museum currently uses several exhibition galleries for overflow storage. The Museum proposes a series of modifications to existing storage areas in the building to allow more effective use of limited space. The Institution requests \$160,000 for FY 1993 to study and implement improvements to the Print Room, which primarily houses works on paper. The Museum will assess alternative compact storage systems and the impact of such a system on lighting, mechanical, and fire protection systems. Implementation will include installation of the selected storage system and necessary alterations to the building systems. Funding of this project will protect the collections from damage, improve their accessibility, and allow the return of exhibition galleries to their original purpose. Future-year projects will address alterations to other storage space in the building.

Museum Support Center (\$250,000) - The Museum Support Center preserves the Institution's collections in secure, environmentally controlled, and pest-free conditions. The Center enforces pest-control procedures rigorously, including a prohibition on preparation or consumption of food in the offices and laboratories in the building. With the steady increase in personnel that has accompanied movement of specimens into the building in the past several years, the existing lunchroom no longer meets staff needs. At times, employees and building occupants, which number approximately 150, must wait for lunchroom space, reducing the time they have to eat or delaying their return to work. During good weather, some staff members use an outdoor eating area, but this is a seasonal solution to the problem. In addition, food selection is extremely limited. The lunchroom offers only vending machines, and nearby eating establishments are not readily accessible on foot within the time available for lunch breaks. The Institution requests \$250,000 to expand the lunchroom. The modifications will add seating space, as well as provide space for a delicatessen-style food service operation. Funding of this project will help keep the Museum Support Center pest free and improve employee morale.

Natural History Building (\$625,000) - For FY 1993, the Institution requests funding for two projects at the Natural History Building: continuing modifications to office and laboratory space and demolition of Halls 2, 18, 19, and 20 to make way for reinstallation of the Geology, Gems and Minerals exhibit.

The Institution requests funding to continue modifications to office and laboratory space at the Natural History Building. Authorized National Museum of Natural History (NMNH) workyears have increased from 331 in 1972 to 591 in FY 1991. Many research students, scholars, and visiting scientists also occupy space in the building. The main portion of the building was constructed more than 80 years ago and the wings more than 25 years ago. Although some modifications have been made to the building over the years, its present configuration does not serve the current staff and Museum functions well. The Museum must renovate the building to accommodate the large increase in staff. In addition, advanced equipment technology now in use in research requires specialized building modifications. These modifications will allow the Museum to maintain its ability to use technologically complex equipment to advance its basic mission.

The continuing transfer to the Museum Support Center (MSC) of NMNH's collections and the relocation of many staff of the U.S. Geological Survey out of the Natural History Building present a much-needed opportunity to reorganize and renovate the space within the building to address the needs of growing programs. The Museum can relieve major space problems by relocating various functions after first reconfiguring the newly vacated space for more efficient use. The Museum is using funds received through FY 1991 (\$200,000) and expected in FY 1992 (\$120,000) to provide high-quality renovated space within the building

for several functions. These include offices for the Biodiversity Program, East Court Planning staff, fossil analysis, and conference space for multiple users. For FY 1993, the Institution requests \$300,000 to enlarge the executive offices, with space gained by the removal of collections storage cases in the corridor. Expansion into the corridor will allow subdivision of offices into a series of suites, with individual offices on the outside and support space on the inside. Modifications will also include installation of acoustical ceilings and lighting and changes to the HVAC and fire protection systems. Funding of this project will relieve severe crowding, as well as make more appropriate and efficient use of available space in the building. The Institution will request funding in future years to continue space modifications.

The Institution also requests \$325,000 in FY 1993 for demolition of Halls 2, 18, 19, and 20. These Halls presently house the Geology, Gems and Minerals exhibit. The Museum plans to reinstall this exhibit as part of the long-range program to update its exhibitions. The new exhibit will incorporate recent advances in the field and new exhibit technologies. The requested resources will fund the demolition of the existing exhibit, including removal of ductwork, equipment, lighting, and walls. The Museum will fund construction of the actual exhibit through its exhibits base in the Salaries and Expenses account, supplemented with nonappropriated resources. Funding of the demolition project will allow the Museum to present new and important ideas to the public about the history of the Earth.

Office of Telecommunications (\$60,000) - The Office of Telecommunications occupies space in the basement of the American History Building. Over the past several years, staff increases and the presence in the Office of contractors working on cooperative projects have caused severe overcrowding that has decreased staff efficiency. The tape and film archives maintained by the Office have also grown. The Institution requests \$60,000 in FY 1993 to convert the existing large studio into more usable office and storage space. Funding of this request will preclude the need to acquire outside office and storage space and allow the Office to provide better service to Smithsonian customers.

Quadrangle Complex (\$150,000) - The Institution requests \$150,000 in FY 1993 to modify several rooms in nonpublic areas of the Arthur M. Sackler Gallery. The funding will reconfigure rooms 2013 and 2014 to relieve current staff overcrowding. Work in these rooms will include installing partitions, related lighting and life-safety systems, and a new ceiling. In addition, the project will install a projection area, partitions and soundproofing in rooms 2072 and 2073. These rooms, now used for conference and object examination, can then be used for audio-visual presentations by staff as well. Funding of this project will improve working conditions and allow increased flexibility in scheduling common rooms for Sackler work groups.

Silver Hill Facility (\$350,000) - The Smithsonian requests funding in FY 1993 to upgrade storage buildings at the Silver Hill Facility to improve storage conditions for the National Museum of American History and the National Air and Space Museum.

Building 17 at the Paul E. Garber Facility in Suitland, Maryland, provides critical collection storage for the National Museum of American History. The artifacts stored in the building do not require carefully controlled climatic conditions. The building, however, needs some improvements to ensure secure storage in a relatively stable environment. The proposed work involves repairing and insulating walls and roof, upgrading electrical wiring and fixtures, and installing new space heaters and smoke detection and sprinkler systems. The building contains asbestos insulation that has contaminated the

objects stored there. The Institution will construct a decontamination chamber outside the building for use in cleaning asbestos from the artifacts. Contractors will then remove the asbestos insulation from the building prior to completing the rest of the work. The staff is using \$325,000 provided in FY 1990 for planning of the project and contract document preparation. The Institution requests \$150,000 in FY 1993 to construct the decontamination chamber. Future-year funding will remove the asbestos and complete the renovation of the building. Funding of this project will improve the storage conditions of the Museum's collections and allow access by staff and scholars to artifacts now contaminated by asbestos.

The National Air and Space Museum also stores collections at the Garber Facility. A portion of Building 24 currently houses, under environmentally controlled conditions, fragile artifacts made from materials such as fabric, leather, rubber, and some metals susceptible to corrosion. Such artifacts can deteriorate rapidly when not stored under controlled conditions. However, the climate-controlled chamber in the building is now very overcrowded and, as a result, the Museum has had to halt acquisition of these kinds of artifacts. The Institution requests \$200,000 in FY 1993 to construct a balcony in Building 24 and to install a second prefabricated refrigerated room. Funding of this project will allow decompression of the existing objects, as well as provide space to preserve future acquisitions.

Smithsonian Astrophysical Observatory (\$735,000) - For FY 1993, the Institution requests funding for five projects at several sites used by the Smithsonian Astrophysical Observatory (SAO). Projects at the Fred L. Whipple Observatory in Arizona include construction of an enclosure for the Infrared Optical Telescope Array (IOTA), extension of the Gamma Ray Telescope Control Building, and construction of an enclosure for the ten-meter reflector. A project proposed for the Cambridge, Massachusetts, headquarters will install a fiber optic network to improve data handling. In addition, funding is requested for miscellaneous modification projects at all locations.

The Smithsonian has entered a five-institution consortium to deploy an Infrared Optical Telescope Array (IOTA) on Mt. Hopkins in Arizona. Combining received light from telescopes separated by baselines of 10 - 50 meters and processing the signal with newly developed optical detection and computer synthesis techniques, IOTA will permit scientists to see distant stellar objects with much finer detail and thereby gain greater insight into the fundamental processes of the universe. To complete the project, the Smithsonian must provide site preparation and a shelter to house the instruments and the support utilities. The ground preparation will include trenches and installation of a system of supporting rails to transport the telescope's movable components. The building, with 500 square feet of area and controlled environmental conditions, will house the instrument's fixed components. SAO will install IOTA's control system in the new basement of the Common Building. The Institution is designing the project with funding provided in FY 1990 (\$200,000) and requests \$105,000 in FY 1993 to complete funding required for construction. Funding of this project will keep SAO at the forefront in astrophysical research and fulfill its obligations to other consortium parties. Operating expenses will come from outside grants and contracts.

The Gamma Ray Telescope Control Building, completed in 1967, houses the reflector control and detector electronics. It has not undergone any major renovations since its initial construction, although the scope of the gamma-ray project has increased significantly. A new second instrument will become operational in 1991. Located near the original instrument, the second reflector will operate in tandem. The two telescopes and

their data outputs will be controlled from the existing building. The Whipple Observatory's Gamma Ray Facility will be the major center for coordinated ground-based observations for the Gamma Ray Observatory recently launched by the National Aeronautics and Space Administration. This observing program places a premium on rapid turnaround data reduction, making on-site computing facilities a necessity. Therefore, computing at the Gamma Ray Facility will increase dramatically from the single small computer currently controlling the ten-meter camera to two state-of-the-art workstations--one to control the new telescope, the other to run quick-look analysis. Increased instrumentation at the facility has also resulted in serious overcrowding in the workshop area. Electronic activity now occupies all bench space in the workshop. Mechanical work that is an important part of any physical research project can no longer be carried out in this area without seriously interfering with the electronic work. The mechanical work must, however, be done close to the telescopes. The Institution requests \$120,000 in FY 1993 to design and construct an addition to the existing building to house the machine tools used in the mechanical work. The existing workshop can then be used for electronic work only. Funding of this project will allow more efficient operation of this important set of instruments.

Scientists use the ten-meter optical reflector on Mt. Hopkins to study cosmic radiation. The reflector acts as a "light bucket" composed of 248 individually adjustable spherical glass mirrors. The original construction, completed in 1968, did not include a dome over the reflector because planners did not know whether the telescope would have a long useful life. The instrument has proved exceedingly effective, however, and it will remain in use for the foreseeable future. A removable shelter will protect the mirror surfaces from damage by sand and weather, reducing maintenance costs of the equipment. The Institution is designing the enclosure with \$30,000 received in FY 1991 and requests \$330,000 for FY 1993 for construction. This project will extend the useful life of this valuable instrument.

The data processing network used by researchers at SAO's Cambridge facilities is based on copper wire interconnections. The ability of the existing system to move large amounts of data is rapidly nearing maximum capacity. However, the amount of data produced by experiments continues to grow, and effective processing of the information requires increased capacity. The Institution requests \$130,000 in FY 1993 to replace the existing copper wire system with a technologically advanced fiber optic network linking individual workstations. Installation of this network will increase the speed of data transmission, make data handling more efficient, and lower overall processing costs by reducing transmitting time.

The Institution also requests \$50,000 in FY 1993 to provide funding for necessary but unanticipated modification projects at all SAO locations. These projects might include local engineering design assistance for small renovations; site utilities and a concrete foundation slab for the new 11-meter gamma-ray telescope; a backup power unit for IOTA; and a storage building for the aluminizing dome. With funding in this category, SAO can continue to provide appropriate space for its research programs.

Smithsonian Environmental Research Center (\$850,000) - For FY 1993, the Institution requests funding to continue expansion of the Mathias Laboratory and construct a new visitor center at the Smithsonian Environmental Research Center (SERC) in Edgewater, Maryland.

SERC performs basic scientific research on coastal land and water systems. Its 42,000 square feet of laboratory, office, educational, and support space occupies several

buildings on 2,600 acres of tidal river system land. Four of SERC's 12 scientific programs currently do not have laboratory space. The Solar Radiation/Photobiology Group has been in expensive rented commercial space in Rockville, Maryland, on a short-term lease and has moved three times in five years. This research is on the cutting edge of instrument technology and provides critical support to global change research, but administrative and scientific interactions with the main body of the bureau are difficult because of the group's remote location from the Rhode River site. The Estuarine Ecology/Parasitology Group was recently added to SERC with an affirmative action position but without laboratory space. This research requires laboratory space for microscope and experimental work on Chesapeake Bay fisheries. The Microzooplankton Group was acquired when the Johns Hopkins University laboratory closed and the functions transferred to the Smithsonian. Despite this group's need for high-quality laboratory space for microscopes and controlled culture chambers, it is currently operating in a used house trailer leased from the U.S. Department of Housing and Urban Development. SERC's Migratory Bird Program, a part of the Institution's global change initiative, requires office space for analysis of habitat utilization by song birds and shore birds migrating between the temperate zone and Central America. Moreover, SERC is requesting funds for two additional senior scientist positions for the Global Change Program in FY 1992. Laboratory space for the new staff is not currently available. SERC plans to accommodate each of these scientific groups in a series of four laboratory "modules" that will connect the new wing of the Mathias Laboratory to the renovated library. The Institution will use funding provided in FY 1991 (\$350,000) to construct office space for the Migratory Bird Group. Staff will use the \$100,000 anticipated in FY 1992 to complete the design of the remaining modules and the related support space. The Smithsonian requests \$600,000 in FY 1993 to construct a second module to house the Solar Radiation/Photobiology Group. This phase of the project also will include construction of necessary utilities and support space, such as a walk-in cold room, laboratory-equipment room, and janitor closet, to serve this and future modules. Funding of this project will avoid additional disruption of important research initiatives. The Institution will request funding in future years for construction of the two remaining laboratory modules.

SERC presently conducts a series of very popular and informative educational activities on the shoreline of the Rhode River. Currently, only an old house trailer is available to provide public rest rooms, offices for docents, and storage for program materials. As part of the Smithsonian's priority to increase its emphasis on cultural pluralism, SERC is now developing an innovative new outdoor exhibit called the Java History Trail, which focuses on man's interactive use of the land at the dock site from prehistoric times to the present. For FY 1993, the Institution requests \$250,000 to construct a 2,800-square-foot building to receive, orient, and support visitors to this and other ongoing and developing public programs. SERC plans to raise privately approximately one-half of the necessary construction funds to supplement this request. Funding of this request will enable SERC to provide better service to the public in explaining important scientific and conservation issues surrounding the Chesapeake Bay region.

Smithsonian Institution Building (\$200,000) - The Smithsonian Institution Building houses the Office of the Secretary and other senior management of the Institution. Recent and continuing changes in staff organization require minor modifications to the building to provide the necessary support facilities for staff activities. The Institution began alterations to staff offices with funds received in FY 1991 (\$100,000). Along with funds anticipated in FY 1992 (\$50,000), the Institution will use the funds requested in FY 1993 (\$200,000) to continue this work, thereby ensuring the efficient operation of these key offices.

Smithsonian Institution Libraries (\$800,000) - For FY 1993, the Smithsonian requests funding for two projects for the Smithsonian Institution Libraries: creation of a Rare Book Library in the Natural History Building and installation of compact shelving in other locations.

The Smithsonian Institution Libraries provides a vital resource for the research and public programs of the Institution. The Libraries' holdings include an extensive collection of rare books in the natural sciences and related areas. The present rare book storage area in the Arts and Industries Building is completely filled and awkward to service due to its location away from research users. The Institution requests \$500,000 in FY 1993 to renovate space in the Natural History Building made available by construction of the East Court Building to house the rare-book collection. The work includes interior modifications and design, fabrication and installation of compact shelving, and other special library furnishings. This new facility will provide protection for rare books valued at several million dollars while making them more accessible to scholars.

The Libraries also plans to extend the use of compact shelving in other locations in the Institution to make more efficient use of the space available for library collections. Many of the branch and departmental libraries supporting individual bureaus and offices are filled to capacity. Lack of additional storage space inhibits the Libraries' ability to care for and conserve existing collections properly and retards progress to acquire new materials critically needed by Smithsonian researchers. The Institution will request funding over several years to install compact shelving systems in these areas. Compact shelving will allow the Libraries to condense current holdings into less space, thus freeing space for future acquisitions. For FY 1993, the Institution requests \$300,000 for the first phase of this project, which will install compact shelving for the science and technology collections in the Dibner Library in the American History Building. The requested resources will allow the Libraries to maintain essential materials to support important research programs of the Institution.

Smithsonian Tropical Research Institute (\$850,000) - The Institution requests funding in FY 1993 for six projects at the Tropical Research Institute in Panama: seawater systems improvement and Building 352 renovations at the Naos site, renovation of five unused bunkers on the nearby Island of Culebra, boathouse renovation and construction of additional staff housing at the Barro Colorado Island site, and modifications to the Ancon Building in Panama City.

For FY 1993, the Institution requests \$60,000 to improve and extend the seawater filter system serving the Naos Marine Laboratory. The current system cannot deliver sufficient volume within reasonable time periods to meet the needs of scientists studying complex oceanic organisms. The requested funding will replace the filtration system; add two new seawater pumping units, piping, valves, and accessories; and extend the system to Naos facilities not served by the present system. Installation of the new system will improve research opportunities for the active Marine Biological Program.

Research activities at the Naos Marine Laboratory have grown over the past several years. The Molecular Evolution Program, for example, began in 1987 with only two primary scientists and a small support staff. This program now involves 11 principal investigators and nine technicians who carry out research in tropical ecology and evolution using protein electrophoresis and techniques based on analysis of the structure of DNA. A number of visiting scientists and fellows employing molecular techniques in their research share the

same laboratory facilities. In addition to larger numbers of scientists, research using molecular techniques requires more intensive laboratory work and fewer field studies than research undertaken previously. Current laboratory and office space is no longer sufficient to accommodate the needs of the staff and visiting scientists. The Smithsonian requests \$200,000 in FY 1993 to convert the second floor of Building 352 (also known as the Surfside Theater) into laboratories and offices for the Marine Program. In addition, the renovated space will house programs now being planned in association with the new research vessel. The renovations will involve upgrading the existing second-floor slab; installation of partitions, ceiling, and floor tiles; modifications to electrical, plumbing, and HVAC systems; installation of fire detection and suppression systems; and an additional exit door and staircase at the south end of the building. The requested resources will allow important marine research programs to continue.

The Institution also requests \$110,000 in FY 1993 to convert five unused bunkers on the adjacent Island of Culebra to support STRI's Marine Biological Program at Naos. The funding will renovate the bunkers into laboratories and classrooms to supplement space at Naos. This project provides a relatively low-cost solution to a significant shortage of space to support growing research programs in marine biology and ecology and to increase public education efforts at a site very heavily visited by the local population.

The Institution requests \$180,000 in FY 1993 to renovate the existing boathouse and pier on Barro Colorado Island. With funds previously provided in FY 1988 (\$220,000), the Institution is constructing a new pier at a distance from the existing docking facility. The new dock will serve the larger vessels used for daily transport of staff and supplies between the Island and the mainland. Renovation of the existing dock will allow a separation of facilities serving the large boats from those serving the smaller boats used as the primary means of transportation by researchers and game wardens for access to other areas of the Island and the adjacent peninsulas. This separation will promote safer operation of the various sized vessels moving into and out of the area. The work will include replacement of both the substructure and superstructure of the existing pier and electrical and plumbing improvements. Funding of this project will improve boating safety on the Island.

STRI's 1986 Facilities Master Plan calls for construction of additional housing for scientists and staff supporting research programs on Barro Colorado Island. Adequate accommodations are especially needed for local workers, currently housed in substandard accommodations, who must stay on the Island for extended periods to support researchers. The Institution completed construction of five buildings and a laundry/lounge building using funding provided in FY 1985 (\$895,000), and two more residential units are under construction with funds provided in FY 1991 (\$400,000). The Institution requests \$50,000 in FY 1993 for design of the final 12 dormitory units. STRI will seek funding in a future year for construction. Completion of staff residences will provide safe, efficient, and comfortable accommodations for those working on the Island.

STRI recently relocated its administrative headquarters from the Ancon Building to the nearby Tupper Laboratory and Conference Center in the Tivoli area of Panama City. The Institution plans to renovate the Ancon Building to provide dormitory and laboratory space for short-term visiting scientists. The Institution will use \$15,000 received in FY 1989 to design the renovation. For FY 1993, the Smithsonian requests \$250,000 to complete construction. The funds will convert the second floor into bedrooms and the ground floor into a series of laboratory/office suites. STRI will coordinate this project with fire protection work and utility repairs funded from the Repair and Restoration of Buildings

account received in FY 1991. Conversion of the Ancon Building will allow the most effective use of this well-located facility convenient to many important STRI research sites.

Alterations and Modifications Planning and Design (\$570,000) - For FY 1993, the Smithsonian requests \$570,000 to plan and design future Minor Construction, Alterations, and Modifications projects. As in other categories of construction activities, such as Major Construction and Repair and Restoration of Buildings, planning is essential for an effective facilities management program, and earlier design starts will improve the accuracy of construction cost estimates. The requested resources will allow the Institution to assess future requirements for changes to existing facilities to accommodate programmatic growth and changes in program direction. Planning studies will evaluate space requirements and make engineering analyses. Staff will also prepare concept designs for buildings and sites and estimate total project costs. Careful research and early design of future needs will result in more accurate cost estimates in advance of budget requests and more timely obligation of construction funds once received.

COLUMBUS QUINCENTENARY PROGRAMS

The Smithsonian's Columbus Quincentenary Programs commemorate the voyages of Christopher Columbus and the subsequent encounter among Europeans, Africans, and the indigenous peoples of the Americas. Through a program of exhibitions, scholarly and public symposia, publications, educational programs, traveling exhibitions, radio, and television, the commemoration will focus on the cultural, historical, and scientific implications of the hemispheric encounter. Twenty bureaus and offices, coordinated by the Office of Quincentenary Programs, will participate in the observance. The Smithsonian's Quincentenary commemoration will serve as the basis for a permanent program emphasizing the history and cultures of the Americas. Descriptions of Quincentenary programs and the participating bureaus are listed below.

Cooper-Hewitt Museum - The Cooper-Hewitt Museum will present an exhibition titled "Maps: Ways to Read the World" that shows how maps have documented world views through the ages, and how their design reflects changing perspectives and technologies. The exhibition opens in the spring of 1992.

Hirshhorn Museum and Sculpture Garden - The Hirshhorn Museum and Sculpture Garden will present an exhibition titled "Four Latin American Modernists," featuring works by Joaquin Torres-Garcia, Diego Rivera, Wifredo Lam, and Roberto Matta, 20th-century Latin-American artists who have explored new frontiers of expression. The exhibition will open in June 1992.

National Air and Space Museum - The National Air and Space Museum will produce a world atlas based on satellite images and publish a user's guide to the atlas. In addition, an exhibition titled "Where Next, Columbus?" will examine space exploration in the next 500 years, the solar system, the search for extraterrestrial life, and the scientific technologies that are a part of extensive exploration. The exhibition will open in the fall of 1992.

National Museum of American Art - The National Museum of American Art recently displayed an exhibition titled "The West as America: Reinterpreting Images of the Frontier, 1820 - 1920." Through major 19th-century paintings, the exhibition examined the myths that formed a national bias for expansion. The Museum is collaborating with the National Portrait Gallery on an exhibition titled "American Art at the 1893 World's Columbian Exposition in Chicago."

National Museum of American History - The National Museum of American History is developing a major exhibition titled "American Encounters." The exhibition focuses on encounters among indigenous, Spanish, and Anglo-American cultures in New Mexico and the subsequent adaption of Indian and Hispanic cultures. An annual series of small case exhibitions and public symposia has begun, leading up to the opening of the exhibition in June 1992.

National Museum of Natural History - The National Museum of Natural History will develop a major exhibition organized around the concept "Seeds of Change." The exhibition will examine plant, animal, and disease exchanges between the Old and New Worlds that transformed the cultural and ecological landscape of the Americas. The Museum is also sponsoring a wide range of symposia, educational programs, and publications associated with the exhibition. The "Seeds of Change" exhibition will open in October 1991.

National Portrait Gallery - The National Portrait Gallery, in collaboration with the National Museum of American Art, will present an American painting and sculpture exhibition based on the 1893 World's Columbian Exposition in Chicago.

Office of Elementary and Secondary Education - The Office of Elementary and Secondary Education will develop a series of multi-cultural education packets written in English, Spanish, and Portuguese. The packets will introduce preschool children to the cultural and animal life of the Americas. During 1991, the Office will present a symposium on the effects of cultural transplantation from Latin America to the United States on the folk art traditions of storytelling, textile arts, and music. The Office will also produce a video recording of the symposium. A special issue of the Office's Art to Zoo will show teachers how to use multi-cultural resources in their communities for teaching about Latin America.

Office of Folklife Programs - The Office of Folklife Programs will present a "Living Exhibition on the National Mall"; a series of three symposia dealing with cultural expression from agricultural, commercial, and industrial societies in the Americas; a scholarly program of folklore, ethnographic, and ethnomusical research; and associated publications. As in FY 1991, the FY 1992 Festival will feature indigenous cultures of the Americas. Smithsonian radio programs, teacher-training workshops, and publications will augment the exhibition.

Office of Public Affairs - The Office of Public Affairs will promote Smithsonian Quincentenary activities through publications, television programs, public service announcements, and radio advertisements.

Office of Quincentenary Programs - The Office of Quincentenary Programs coordinates the Smithsonian's Columbus Quincentenary commemoration. The Office will continue publication of the newsletter, The New World, printed in English and Spanish. The Office is organizing the following events: the Quincentenary Inaugural Gala, in September 1991; "Symposium of the Americas," in September 1991; and "Images: Women in the Americas," in November 1991. In addition, the Office validates the historical accuracy and content of the five-part television series titled, "The Buried Mirror."

Smithsonian Institution Press - The Smithsonian Institution Press is publishing a three-volume series titled the Columbian Consequences that addresses the social, demographic, ecological, and ideological impact of Columbus's landing. Scheduled for completion prior to the 1992 observances, the project explores early European/Native-American interaction of Spanish colonial settlements in the New World.

Smithsonian Institution Traveling Exhibition Service - The Smithsonian Institution Traveling Exhibition Service will design and distribute traveling versions of several Quincentenary-related exhibitions. Among them are the International Gallery's "Tropical Rainforests: A Disappearing Treasure"; the National Air and Space Museum's "Where Next, Columbus?"; the National Museum of American History's "Contrast: 40 Years of Continuity and Change in Puerto Rico"; and the National Museum of Natural History's "Seeds of Change."

National Zoological Park - The National Zoological Park will highlight the unique tropical ecosystem in its "Amazonia" exhibit. The exhibit provides closeup views of the complex webs of partnership and competition that exist among plants and animals of the rainforest and discusses the global impact of the rainforest's destruction.

Other Quincentenary Activities - The Office of Museum Programs will conduct a training session for museum professionals from Latin America and the Caribbean. The Resident Associate Program will develop lectures, seminars, workshops, and performances with a focus on the Quincentenary-related exhibitions and programs. In 1992, the Smithsonian Tropical Research Institute will co-sponsor the Fourth World Congress on National Parks for the International Union for Conservation of Nature and Natural Resources to address the conservation of natural resources in the Americas.

The accompanying table identifies Federal funding, appropriated in FY 1991, estimated in FY 1992, and requested in FY 1993, to support Columbus Quincentenary programs.

Federal Funding for Columbus Quincentenary Programs
FY 1991 - FY 1993

	FY 1991 Approp. (\$000's)	FY 1992 Estimate (\$000's)	FY 1993 Request (\$000's)
Cooper-Hewitt Museum	24	24	24
Hirshhorn Museum and Sculpture Garden	50	50	50
National Air and Space Museum	41	41	41
National Museum of American Art	60	60	60
National Museum of American History	609	609	609
National Museum of Natural History	462	462	462
National Portrait Gallery	40	40	40
Office of Elementary & Secondary Education	15	15	15
Office of Folklife Programs	210	210	210
Office of Public Affairs	15	15	15
Office of Quincentenary Programs	116	131	131
Smithsonian Institution Press	15	15	0
Traveling Exhibition Service	<u>55</u>	<u>55</u>	<u>55</u>
 TOTAL	 1,712	 1,727	 1,712

SMITHSONIAN INSTITUTION
MUSEUM PROGRAMS AND RELATED RESEARCH
(SPECIAL FOREIGN CURRENCY PROGRAM)

1991 Appropriation.....	-0-] -- Equivalent in Excess Foreign Currencies
1992 Estimate.....	-0-	
1993 Estimate.....	-0-	

PROGRAM OF GRANTS FOR RESEARCH

The Smithsonian Institution, through its Special Foreign Currency Program, makes grants to United States universities, museums, and other institutions of higher learning, including the Smithsonian itself, primarily for research and advanced professional training in fields of traditional Smithsonian competence.

Excess currencies appropriations directly funded the Program through FY 1986. Outlays from the budget authority appropriated through FY 1986, including the Forward-Funded Reserve for the American Institute of Indian Studies, will continue through the 1990s. In addition, since FY 1986 the Smithsonian has received allocations of U.S.-owned Indian rupees from the funds appropriated to the Department of State in FY 1985 for the establishment of the U.S.-India Fund for Educational, Cultural, and Scientific Cooperation. (OMB Bulletin 91-03, issued on November 12, 1990, indicates that the Secretary of the Treasury has designated Burma as an excess currency country for FY 1991 and FY 1992.)

For the past 25 years, the Special Foreign Currency Program has been a major source of support for research carried out by United States institutions in those countries for which excess foreign currencies are available. The full responsibility for the design, execution, and publication of research results rests with a scholar working within the program of a United States institution. Smithsonian foreign currency grants strengthen the fundamental research and training activities of collaborating institutions abroad, since most projects directly involve host country institutions and scholars. Enduring professional ties, which result from joint efforts and scholarly exchange, contribute to the strongest form of United States cultural relations with other nations. These ties also contribute to the global integration of research data in the sciences. As a result of this interaction, the gap between industrial and developing nations' scholars has narrowed. Moreover, research sponsored by the Program aims, in part, at improving understanding of the environment and the management and conservation of scarce natural and cultural resources that are threatened by the rapid growth of world population and technological development.

In FY 1991, ongoing research supported by these grants included the following projects of special interest:

- archeological and geomorphic studies at Harappa in Pakistan that are enhanced with studies of present-day traditional bead makers in Khambhat, India;
- the development of analytic models for the propagation of radio jets to determine the nature of giant radio galaxies;
- observation by U.S. historians, anthropologists, political scientists, and other social scientists, of the 1991 Indian elections to provide, for the third time since 1980, a window on the world's largest democracy in action;

- documentation of Mughal gardens of Pakistan that provides not only heretofore unknown scholarly information but lays the foundation for the authentic restoration of these important sites;
- an annotated translation of the works of Ameer Khrusro, 13th-century poet, historian, musicologist, and inventor, that provides a new foundation for study of the formative period of North-Indian culture.

Further, with emphasis on the exchange of information through small workshops, symposia, and field conferences, the Program encourages international research in specialized areas. In FY 1991, for example, U.S. scholars received support for participation in exchanges on the subjects of the 300th anniversary of Calcutta, mass spectrometry, information technology, forestry, advertising and consumption, traditional medicine, and zoo management.

FORWARD-FUNDED RESERVE FOR THE AMERICAN INSTITUTE OF INDIAN STUDIES

Since 1967, the Smithsonian has provided annual funding through the Special Foreign Currency Program to the American Institute of Indian Studies (AIIS) for its fellowships, research, symposia, and publications programs, as well as its administrative costs. The Smithsonian has helped sustain this Institute and other American research centers abroad for the last 25 years because of their significant contributions to scholarship and science without regard for national boundaries and because of their special service to American scholars.

With Special Foreign Currency Program funding received from FY 1980 through FY 1985, the Smithsonian established a forward-funded reserve of \$7,170,000 equivalent in rupees. This reserve enabled the AIIS to sustain its programs after the removal of India from the excess currency list in 1985. Since FY 1986, AIIS, with oversight from the Smithsonian, has drawn upon the funds from this reserve for its fellowship program and administrative costs in India. The Institution continues to examine annual proposals through its peer review system before releasing funds from the reserve account to AIIS. The reserve should support AIIS programs through the 1990s in conjunction with continued support from the U.S.-India Fund. In 1990, the U.S. Congress authorized the deposit of the reserve in interest-bearing (rupee) accounts, a plan that will help to continue the viability of the fund for many years.

U.S.-INDIA FUND FOR EDUCATIONAL, CULTURAL, AND SCIENTIFIC COOPERATION

In FY 1985, Congress appropriated \$100 million equivalent in U.S.-owned Indian rupees to the Department of State to establish the U.S.-India Fund for Educational, Cultural, and Scientific Cooperation. Since FY 1986, the Smithsonian has received allocations from this fund to continue programs in India similar to those administered under the Special Foreign Currency Program, which would otherwise have ended when India lost excess currency status in 1985. The Institution received an amount of \$1.4 million in FY 1986, \$1.5 million in FY 1987, \$1.8 million in FY 1988, \$1.75 million in FY 1989, \$2.5 million in FY 1990, and \$1.85 million in FY 1991. In FY 1992, the Institution will receive \$1.5 million. Based on current usage, the fund will be totally liquidated by 1997.

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